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ABSTRACT

The purpose of this study was to determine the degree of relationship between the effectiveness of the Instruction and Research Unit in the areas of instructional program (reading and mathematics), organizational operations (procedural and substantive), school-community relations, and staff development to several measures of student affective behavior in Individually Guided Education schools. The framework for the study was based on general systems theory, social systems theory, and self concept theory. Instruction and Research (I&R) Unit Operations Questionnaire was administered to 179 teachers and the Self Observation Scale was administered to 1,409 students. A multiple stepwise linear regression analysis and Pearson product-moment correlations were conducted. A significant amount of variance in student self acceptance and in student-teacher affiliation was explained by I&R Unit Organizational Operations. There was no significant relationship between I&R Unit total effectiveness and any measures of student affective behavior.
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TECHNICAL REPORT NO. 389

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JULY 1976

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Technical Report No. 389

EFFECTIVENESS OF THE MULTIUNIT ELEMENTARY SCHOOL'S INSTRUCTION
AND RESEARCH UNIT AND STUDENT AFFECTIVE BEHAVIOR IN IGE SCHOOLS

by

Barbara H. Bocian

Report from the Project on
Organization for Instruction and
Administrative Arrangements

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July 1976

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FUNDING

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	11
LIST OF TABLES	v
LIST OF FIGURES	vi
CHAPTER	
I. INTRODUCTION TO THE STUDY	1
Background of the Study	2
Statement of the Problem	6
Theoretical Framework	6
General Systems Theory	7
Social Systems Theory	8
Self Concept	12
Statement of the Hypotheses	15
Limitations of the Study	17
Overview of the Study	18
II. DESIGN AND METHODOLOGY	19
Population and Sample Selection	19
Instrumentation	21
I&R Unit Operations Questionnaire	21
Self Observation Scales	23
Data Collection	29
Data Analysis	31

	Page
III. ANALYSIS OF THE DATA	32
Tests of the First Seven Major Hypotheses	32
Tests of the Last Seven Hypotheses	50
IV. SUMMARY, FINDINGS, CONCLUSIONS, AND IMPLICATIONS	53
Summary	53
Findings and Conclusions	55
Findings	55
Conclusions	58
Implications for Practice	59
Implications for Further Research	62
BIBLIOGRAPHY	64
APPENDICES	71
APPENDIX A	72
APPENDIX B	80
APPENDIX C	88
APPENDIX D	93
APPENDIX E	97

LIST OF TABLES

TABLE		Page
1	Reliability Levels for the I&R Unit Operations Questionnaire	22
2	Factors and Corresponding Items of the I&R Unit Operations Questionnaire	23
3	Descriptive Statistics of Sample Distributions	34
4	Means, Standard Deviations, and Correlations for the Independent Variables	35
5	Means, Standard Deviations, and Correlations for the Dependent Variables	36
6	Correlations Between Independent Variables and Dependent Variables	38
7	Regression Analysis With Dependent Variable of Self Acceptance	39
8	Regression Analysis With Dependent Variable of Self Security	41
9	Regression Analysis With Dependent Variable of Social Maturity	43
10	Regression Analysis With Dependent Variable of Social Confidence	44
11	Regression Analysis With Dependent Variable of School Affiliation	46
12	Regression Analysis With Dependent Variable of Teacher Affiliation	47
13	Regression Analysis With Dependent Variable of Peer Affiliation	49
14	Descriptive Statistics For Total I&R Unit Effectiveness	51
15	Correlation Coefficients Obtained For Total I&R Unit Effectiveness and the Seven Dependent Variables	52

LIST OF FIGURES

FIGURE		Page
1	Multunit Organization of an ICE School of 400-600 Students	4
2	Normative and Personal Dimensions of Social Behavior . .	10
3	A Social System In The Framework of a General Systems Model	11

ABSTRACT

EFFECTIVENESS OF THE MULTIUNIT ELEMENTARY SCHOOL'S INSTRUCTION AND RESEARCH UNIT AND STUDENT AFFECTIVE BEHAVIOR IN IGE SCHOOLS

Barbara Helen Bocian

Under the Supervision of Professor James M. Lipham

The purpose of this study was to determine the degree of relationship between the effectiveness of the I&R Unit in the areas of (1) Instructional Program (Reading and Mathematics), (2) Organizational Operations (Procedural and Substantive), (3) School-Community Relations, and (4) Staff Development to several measures of Student Affective Behavior in IGE schools. The framework for the study was that of general systems theory, social systems theory, and self concept theory. The first seven major null hypotheses were tested by the following general hypothesis:

There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Self Acceptance, Self Security, Social Maturity, Social Confidence, School Affiliation, Teacher Affiliation, and Peer Affiliation.

The second seven major hypotheses were tested by the following general hypothesis:

There is no significant relationship between Total I&R Unit Effectiveness and (Student) Self Acceptance, Self Security, Social Maturity, Social Confidence, School Affiliation, Teacher Affiliation, and Peer Affiliation.

Data were collected from 42 I&R Units from 42 multiunit ICE elementary schools in 13 different states. This included 179 intermediate level teachers and 1,409 students.

The instrumentation utilized in this study consisted of the I&R Unit Operations Questionnaire and the Self Observation Scales (SOS), Intermediate Level, Form C. The I&R Unit Operations Questionnaire provided data for determining the extent of role fulfillment of the staff. The dependent variable, student affective behavior, was measured by the SOS which provided seven measures of self concept. In general, staff members of ICE schools perceived their I&R Units to be "effective." In general, the self concept scores of students in ICE schools were equal to or slightly higher than the national norm group of students in non-ICE schools.

A multiple stepwise linear regression analysis was used to test the first seven hypotheses, and a Pearson product-moment correlation was used to test the last seven hypotheses. The probability level for all tests of significance was established at .05.

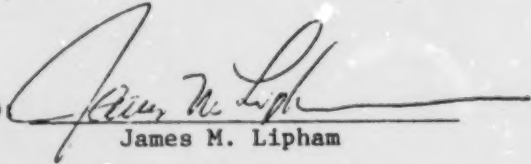
The major conclusions were:

- (1) There is no significant multiple correlation between any of the independent variables and (Student) Self Security, Social Maturity, Social Confidence, School Affiliation, and Peer Affiliation.
- (2) A significant amount of variance in (Student) Self Acceptance was explained by I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural).
- (3) A significant amount of variance in (Student) Teacher Affiliation was explained by I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural).

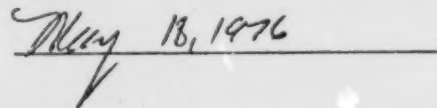
- (4) There is no significant relationship between I&R Unit Total effectiveness and any of the measures of student affective behavior.

Based upon the findings, some suggestions for further research and practice in this domain were tendered.

APPROVED


James M. Lipham

DATE:


May 13, 1976

CHAPTER I

INTRODUCTION TO THE STUDY

The inclusion of affective outcomes in the educational process is continually supported in educational literature. Johnson (1974) claimed that our society over the past thirty years has experienced rapid technological and cultural change that has greatly increased the importance of affective outcomes. Katzenmeyer and Stenner (1973) claimed that within the last five years there has been a resurgence of interest in the affective domain. Whatever the impetus, the affective domain is reaching a new priority in our educational institutions. Holt (1969), Glaser (1969), Leonard (1968), and Simon (1974) are only a few who have brought concern with affective education to the forefront.

Affective outcomes of the schooling process are defined in this study as those feelings and attitudes that a child holds toward himself/herself, peers, teachers, and school. The innovative schooling process examined is the multiunit elementary school, the organizational component of a comprehensive educational system known as Individually Guided Education (IGE) which was developed by the Wisconsin Research and Development Center for Cognitive Learning (R & D Center) and cooperating educational agencies (1971). Klausmeier (1977) recently stated:

From its beginning in 1965-66, the primary aim of IGE has been to produce high student achievement in terms of understandings, skills, and action patterns related to the various areas, to improve students' abilities that underlie

these achievements, and to contribute to the healthy personal, social, moral, and civic development of each student. After the first year of IGE schooling, students' achievement in those curricular areas where instructional programming for the individual student is implemented should be higher than that achieved by students before the school changed to IGE, and the students should also have developed healthy self-concepts.*

At a time when accountability is a relevant educational issue and affective behavior is valued as a school outcome, it seems timely to investigate the relationship of IGE implementation to student affective behavior. This study seeks to clarify this relationship by examining the variance in the tasks performed by the teaching unit as they correlate with student self concept.

Background of the Study

IGE at the elementary school level has been developed through the systematic application of research and development strategies to the improvement of educational practice by the Wisconsin R & D Center and cooperating agencies (Klausmeier, Quilling, and Sorenson, 1971). IGE with its organizational structure of the multiunit school has been described as:

The first alternative to the age-graded self-contained elementary school in this century. It is a comprehensive system designed to produce higher educational achievement through providing effectively for differences among students in rate of learning, learning styles, and level of motivation.... (p.12)

The multiunit organizational structure is designed to provide open communication among school personnel, educational and instructional decision making at the appropriate levels, and accountability

*Emphasis supplied by writer

by educational personnel at all levels (Klausmeier, Quilling, and Sorenson, 1971). Figure 1 shows the prototypic organization of a multi-unit elementary school. The organizational hierarchy of the multiunit school consists of three groups: the Instruction and Research Unit (I&R Unit) at the teaching-learning level, and the Instructional Improvement Committee (IIC) at the building level, and Systemwide Program Committee (SPC) at the district level.

The I&R Unit consists of students, staff teachers, including the unit leader, intern(s), teacher aide(s), and an instructional secretary. The main functions of the teachers and unit leader of each I&R Unit are to plan, carry out, and evaluate instructional programs for each student in the unit and to engage in continuous on-the-job development. Each I&R Unit is also expected to plan and conduct research, and it may be involved in preservice teacher education activities (Lipham and Klausmeier, 1976). Performance objectives for the I&R Unit are in the areas of instructional programming, organizational operations, staff development, and school-community relations. Variance in the attainment of these stated performance objectives has been reported by Fellegrin (1969), Ironside (1972), and in a 1971 report of the development and evaluation of the multiunit school (Klausmeier, Quilling, and Sorenson, 1971). To date, little systematic research has been conducted that takes into account the variance in role attainment on the outcomes of the school.

IGE specific research in the area of self concept has been limited and inconclusive. Edwards (1972) hypothesized that students in IGE schools would have a better self concept than students in traditional

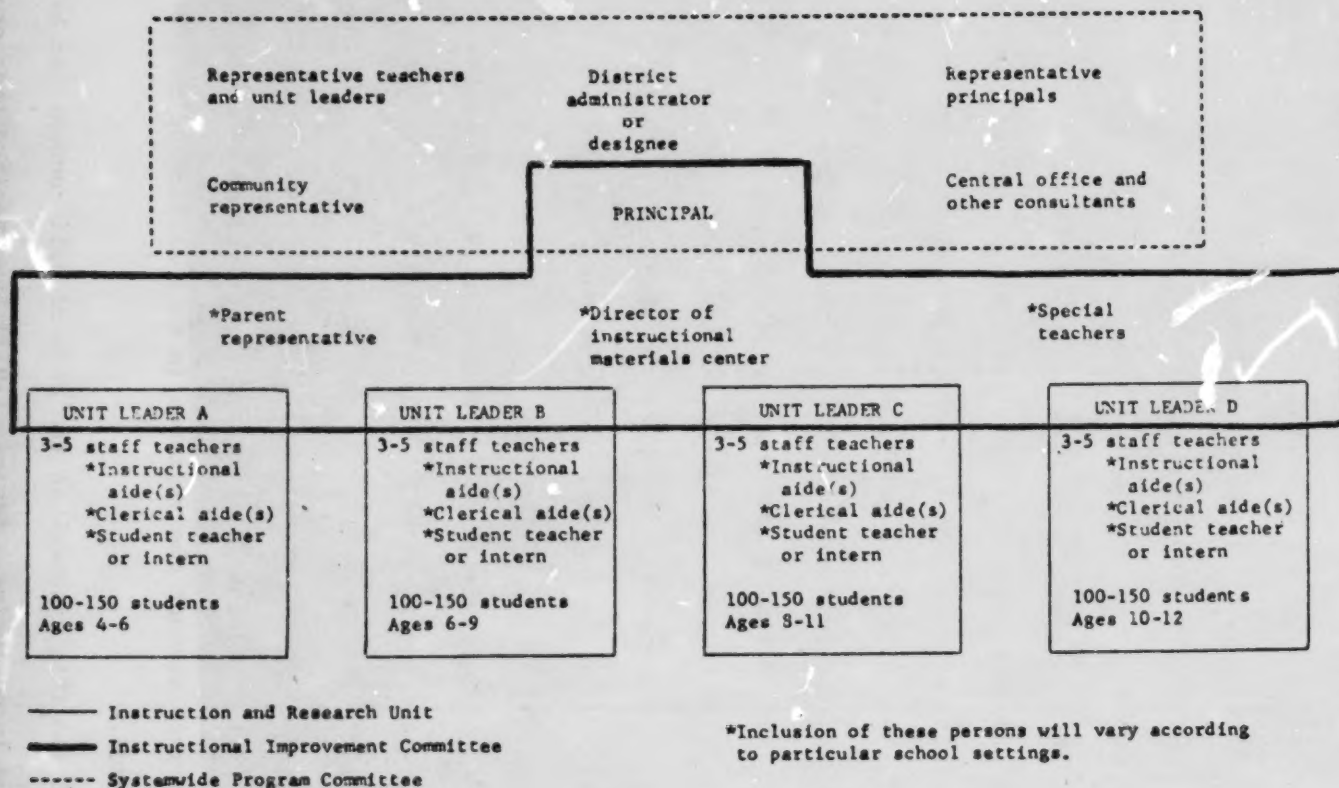


Figure 1--Multiunit Organization of an IGE School of 400-600 Students
 (Adapted from: Herbert J. Klausmeier, Richard G. Morrow, and James E. Walter,
Individually guided education in the multiunit school, Madison, Wisconsin:
 Wisconsin Research and Development Center for Cognitive Learning, 1968).

schools. In his findings, one IGE school had a significant (.05) gain in self concept and two IGE schools had nonsignificant gains. These findings did not support his hypothesis. Nelson, et al. (1975) found no significant difference between students in IGE schools and pupils in traditional schools in regard to attitude toward teachers, attitude toward instruction, and attitude toward school in general. Students in IGE schools scored moderately higher on the measure of attitude toward fellow pupils but the difference was not significant. On the measure of self concept as a learner, students in IGE schools scored significantly higher than students in traditional schools, only when data from a particular school district was excluded from the analysis. Yomtoob (1974) reported no significant difference between IGE and non-IGE students with respect to either self concept or attitude. By contrast, Peterson and Scott (1975) found that fourth grade IGE students scored significantly higher on the Brookover Self Concept of Ability Scale (BSCA) than did non-IGE students, but the seventh grade IGE students did not score significantly higher than did non-IGE students.

Further analysis of these research studies reveal significant problems that may account for inconsistencies in results. Comparisons between IGE schools and traditional schools have been global in scope. IGE is a multi-dimensional system and must be treated as such. Global analyses often fail to measure the relationships of the several components of IGE. There is a need to delineate further the variables being measured. Similarly, some studies have failed to define or apply an operational definition of an IGE school. What minimal criteria must a school meet in order to be considered an IGE school? Indeed, it is

feasible that schools were utilized in some research studies that would not have met the minimal criteria established by the R & D Center. The implications are obvious concerning the effects of such lack of control in sample selection upon the statistical findings.

This study supports Nelson's (1975) recommendation to look within the IGE school as to which specific components of IGE might relate to student self concept. In the present study, an operational definition of an IGE school was applied and specific criteria were utilized in sample selection to provide an accurate picture regarding student outcomes in IGE schools.

Statement of the Problem

The purpose of this study was to determine the degree of relationship between the effectiveness of the I&R Unit in the areas of (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development to several measures of student affective behavior. A random sample of forty-two I&R Units in forty-two randomly selected IGE elementary schools participated in the study. The teachers of each I&R Unit provided data relative to I&R Unit effectiveness, and a random sample of one third of the students in each I&R Unit provided data relative to student affective behavior.

Theoretical Framework

This study was based on three major bodies of theory. Encompassing the entire study is general systems theory as it conceptualizes

the relationship between inputs, processes, and outputs in an educational system. Social systems theory, in the context of general systems theory, defines and explains the relationship between institutional role expectations and observed behavior. Since in this study student affective behavior, specifically student self concept, is the measured output or benefit of the system, self concept theory is also basic to the study.

General Systems Theory

The school is a network of interrelated subsystems, each responsible for accomplishing part of the overall task of converting educational inputs into outputs (Knezevich, 1969). Systems theory, including systems analysis, systems engineering, operations research, systems management, and cost-effectiveness analysis, is growing as an approach in educational institutions dealing with evaluation of both process and product (Knezevich, 1969). Systems theory had its beginnings in the scientific management movement by Taylor (1911), Gilbreth (1911), Robbitt (1913) and Fayol (1949), and further developed during World War II as operations research (Churchman, et al, 1957).

Today, there exists no single, all inclusive, universally accepted theory of general systems (Lipham and Hoeh, 1974). Various definitions have been stated by Hall and Fagen (1956), Grinker (1956), Miller (1965), Haberstroh (1965), Johnson and Rosenzweitz (1967), and Banghart (1969). Kershaw and McKean (1959) defined a system as "a set of interrelated factors that are used to produce an output." In its broadest terms, a system is "a set of objects together with relationships between the

objects and between their attributes" (Immegart, 1969). Knezevich (1969) placed this definition in a school setting when he defined a systems approach as:

...a unified systematic way of translating resources made available to it in the form of money, people with varying abilities, facilities, and processes, into outcomes, outputs, or benefits related to the educational goals of society.... A system or subsystem is a total array of resources, human and physical, concerned with the achievement of objectives. (p. 542)

Lipham (1974) conceptualized a model of the school as a general system, where inputs to the school in the form of teachers, students, materials, and facilities from the larger environment, are transformed into outputs (productivity, affectivity, and feedback). This study is concerned with the outcome of affective behavior as it relates to students within the system. The processes are the varying behaviors of the I&R Unit as defined by the institutional goals of the IGE school as a social system.

Social Systems Theory

Social systems theory provides a framework for defining and understanding social behavior as it relates to the goals or outcomes of the educational system. Parsons (1951) conceptualized and defined a social system as:

...a plurality of individual actors interacting with each other in a situation which has at least a physical environmental aspect, actors who are motivated in terms of a tendency to the 'optimization of gratification' and whose relation to their situations, including each other, is defined and mediated in terms of a system of culturally structured and shared symbols. (pp. 5-6)

Later, Getzels and Guba (1957), Getzels and Thelen (1960), and Getzels, Lipham, and Campbell (1968) applied this theory to the school.

setting. Any social system has two basic dimensions, the normative or institutional dimension, and the idiographic or personal dimension. The normative dimension is composed of institutional roles and expectations, while the idiographic dimension is composed of individual personalities and need-dispositions (Getzels and Guba, 1957). Social behavior in this theoretical model is defined as the function of the personality of the individual and the role within the institution in which the individual functions, or $B=f(R \times P)$, (Getzels, et al., 1968). Figure 2 presents the basic social systems model. The general model also includes a cultural dimension.

For this study, the I&R Unit of the ICE elementary school is the focal social system. The roles and accompanying expectations of the teachers within the unit constitute the normative dimension of the system. This study seeks to investigate the variation in role performance of the I&R Unit as it relates to a proposed outcome of the system, that being student affective behavior. Figure 3 places social systems theory in the context of general systems theory. Inputs in this study are the human and material resources to the social system; processes are the social behaviors of teachers in the social system of a school as they influence the output, student affective behavior. The overlapping circles indicate the interrelationship of inputs, processes, and outputs. The overlapping of the process and output circles indicates that observed social behavior can be considered a process as well as an output in and of itself. For example, effectiveness of an I&R Unit (congruence between role expectations and observed behavior) (Getzels,

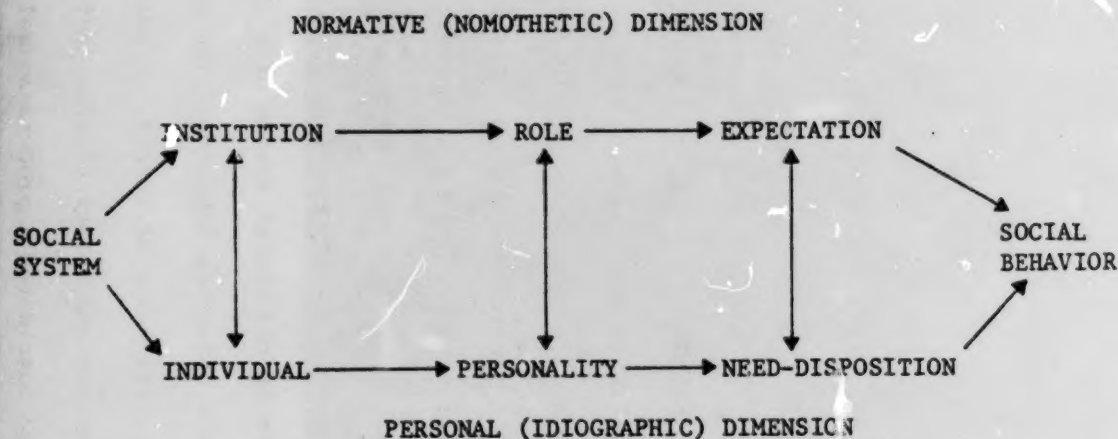


Figure 2 -- Normative and Personal Dimensions of Social Behavior

Source: Adapted from J. W. Getzels and E. G. Guba. Social behavior and the administrative process. School Review, 1957, 65, 429. Copyright 1957 by the University of Chicago.

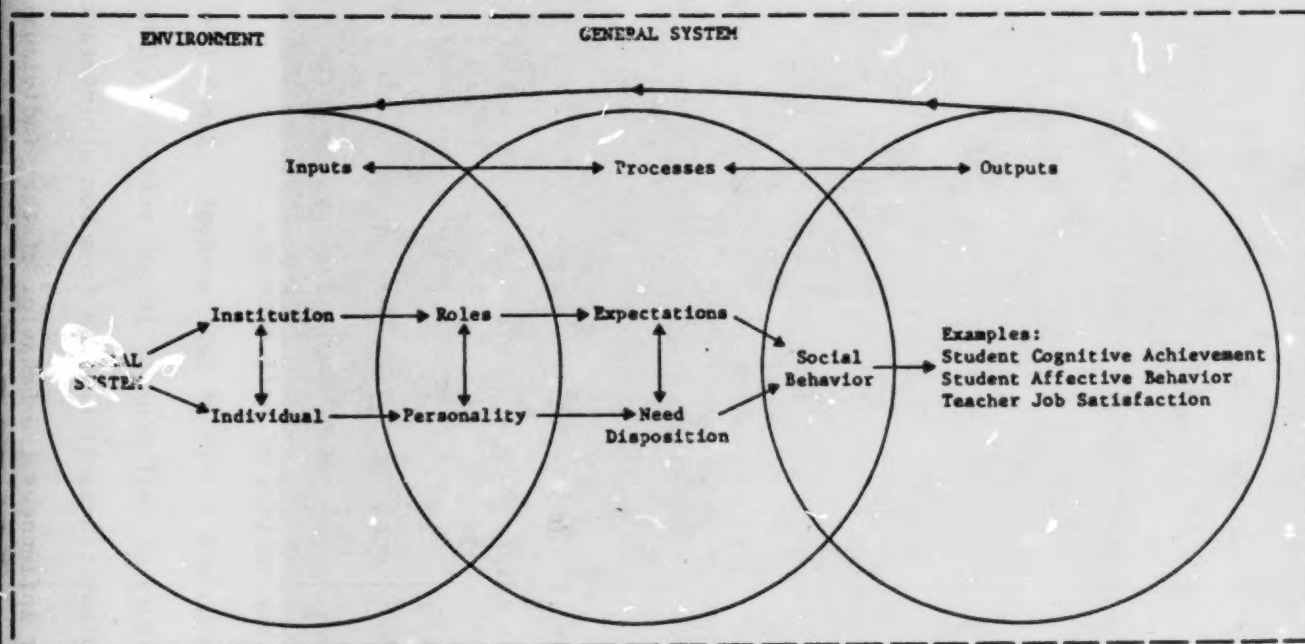


Figure 3--A Social System In The Framework of a General Systems Model

et al., 1968) can be viewed as a goal or output of the school system, or as a process variable which influences student outcomes.

This investigation seeks to examine the relationship between major teaching processes on student output by analyzing the relationship of the variance in the meeting of specified institutional role expectations by the I&R Unit to student self concept.

Self Concept

Since the time of Plato and Aristotle, the self has been of philosophical interest (Owens, 1959). With the introduction of scientific psychology by James (1890), self concept has been afforded an important place in psychological thinking. Since that time, self concept has played an important role in many traditional personality theories such as those postulated by Mead (1934), Lewin (1936), Allport (1937), Lundholm (1940), Murphy (1947), and Cattell (1950). Such phenomenological theorists as Lecky (1945), Rogers (1951), and Syngg and Combs (1949) have stressed the importance of the role of self concept in determining a person's behavior. Gordon and Gergen (1968) reported that in the field of psychology and sociology, over 2,000 publications had dealt with the subject of self concept.

There is no one theory of self concept. Kinch (1963) presented a formalized theory of self concept in one sentence: "The individual's conception of himself/herself emerges from social interaction and, in turn, guides or influences the behavior of that individual [p. 48]." Phenomenologically speaking, a person's behavior is due to how he/she perceives the situation and himself/herself at that moment in time.

Self theory maintains that the self concept is the frame of reference through which the individual interacts with his/her world (Fitts and Richard, 1971). Thus, it exerts a powerful influence as a determinant of human behavior (Felkner, 1974).

The development of one's self concept is achieved through a series of social interactions with one's environment from infancy through middle childhood. Significant others, such as parents, peers, and teachers, are of paramount importance to the development of the growing child's self concept. Since a child has relatively no way of knowing exactly how others see him/her, a child must look to others for feedback. They become the reflections of "self" (Cooley, 1902).

Whether purposefully applied or shamefully neglected, the influence of the schooling process is second only to the home in influencing the self concept of children. This is evidenced by the numerous testimonials by people who state that the most significant person in their life was their teacher. Although self concept tends to be a rather stable entity, it is not unalterably fixed, but is modified by every life experience through at least the maturing years (LaBenne and Greene, 1969). What happens at school can and does make a difference. Teachers are the distributors of rewards and punishment. They are in a position to set realistic individual goals for children. Teachers are in a focal position in the providing of a learning environment that either enhances or inhibits positive self concept.

The concern for the development of positive self concept is of primary concern to educators in developing, refining, and evaluating the school process. Self concept has been examined in relation to

achievement, school adjustment, anxiety, and respect for others. An impressive number of studies report a significant relationship between self concept (variously measured) and academic achievement. Lecky (1945) was one of first to report that low academic achievement was often due to a child's definition of himself/herself as a nonlearner. Of the other numerous studies in this area a few are particularly noteworthy because of their similarities to this research study. Similar in population is the correlational study by Brookover, Thomas, and Paterson (1964) who used a sample of 1,050 seventh grade students. A statistically significant positive correlation was found between self concept and general academic performance. In a sample of 180 intermediate grade children, Caplin (1969) discovered that children having positive self concepts had high academic achievement. Similarly, Lumpkin (1959) in examining the achievement in reading of fifth grade children, found a significant relationship between the two variables.

Two particularly relevant research studies that employed the Self Observation Scales (SOS), (Katzenmeyer and Stenner, 1973) a direct, self-report, group administered instrument with seven empirically determined subscales which measure the way children perceive themselves and their relationships to peers, teachers, and school, further validate the positive relationship between self concept and achievement. In a sample of 225 sixth grade children in two West Virginia rural counties, two ability tests, six achievement tests, and the Self Observation Scales were administered (Katzenmeyer and Stenner, in press). Self concept was shown to add significantly to the prediction equation for

achievement. Stenner and Katzenmeyer (1976) also administered the SOS to 3,054 fourth, fifth, and sixth grade children and compared their scores with the ratings given by their teachers as to student reading achievement. Six of the seven SOS scales were shown to have a positive and significant ($p < .0001$) correlation with reading achievement.

Williams and Cole (1968) in their research not only found a positive correlation between self concept and academic achievement of a group of sixth grade students, but found a positive correlation between self concept and school adjustment factors, such as attitudes toward school and emotional adjustment. Another non-achievement correlation was conducted by Hughes (1967) who discovered that sixth grade boys and girls with a positive self concept showed less anxiety and greater coping strengths in handling a stress-inducing experimental situation. Sheerer (1949) also demonstrated that there was a positive correlation between acceptance of self and acceptance of and respect for others.

As educators become increasingly aware of the interaction of self concept with achievement and the importance of self concept as it influences behavior, the fostering of a positive self concept as an educational outcome assumes high priority. Innovative programs that promote the development of a healthy self concept will continue to grow and be in demand throughout the country.

Statement of the Hypotheses

The major null hypotheses examined in this study were:

- (1) There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics),

- (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Self Acceptance.
- (2) There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Self Security.
- (3) There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Social Maturity.
- (4) There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Social Confidence.
- (5) There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) School Affiliation.
- (6) There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Teacher Affiliation.
- (7) There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Peer Affiliation.

- (8) There is no significant relationship between Total I&R Unit Effectiveness and (Student) Self Acceptance.
- (9) There is no significant relationship between Total I&R Unit Effectiveness and (Student) Self Security.
- (10) There is no significant relationship between Total I&R Unit Effectiveness and (Student) Social Maturity.
- (11) There is no significant relationship between Total I&R Unit Effectiveness and (Student) Social Confidence.
- (12) There is no significant relationship between Total I&R Unit Effectiveness and (Student) School Affiliation.
- (13) There is no significant relationship between Total I&R Unit Effectiveness and (Student) Teacher Affiliation.
- (14) There is no significant relationship between Total I&R Unit Effectiveness and (Student) Peer Affiliation.

Limitations of the Study

There were five important limitations to the study. First and of never-ending concern to social science researchers was the inability to control satisfactorily for other environmental or social system influences. Although control of such influences was minimized by using mean scores for analysis and by applying specific intra-organizational criteria in the selection process, equalization of the influence of other societal, institutional, and personal inputs cannot be assumed. The second limitation concerned the degree of awareness held by the teachers as to the IGE model. Specifically, the teachers were assumed to be knowledgeable about the tasks designated as belonging to the I&R Unit. This assumption is necessary to assume consistency in the criteria applied in answering the I&R Unit operations questionnaire. The third limitation applies both to teachers and students in the responses they gave to the particular instrumentation. Self report is not necessarily

congruent with actual observed behavior. Behavior is assumed from self report instrumentation, but not assured. Teachers and students may honestly believe they are perceived or viewed in a particular fashion, but in actuality the observed behavior does not support such perceptions. A fourth limitation of the study concerned the significant role that reading and reasoning ability play in the self concept instrumentation. Although efforts were made to aid children whenever possible in understanding the statements presented, there was no way to assure that all children equally understood what was being asked of them. Fifth, and of major importance, was the limitation of relying on only one individual's (the principal) perceptions as to whether the school met specified criteria required to participate in this study. Often, these perceptions seemed questionable when the researcher visited some schools, but could not be validated because of a lack of time or the application of a reliable systematic observation procedure developed prior to visitation.

Overview of the Study

This chapter presented the nature of the study, the background of the study, the statement of the problem, the related theory, the statement of the hypotheses, and the limitations of the study. Chapter II includes a description of the design and methodology of the study. Chapter III presents the data and describes its analysis. Chapter IV includes a summary of the study, findings, conclusions, and implications for further research and for educational practice.

CHAPTER II

DESIGN AND METHODOLOGY

This chapter includes a description of the methodology of the study and the statistical design for analyzing the data. The chapter is composed of four sections: population and sample selection, instrumentation, data collection, and data analysis.

Population and Sample Selection

The 1973-74 IGE/Multiunit Elementary School Directory (Wisconsin R & D Center, 1974) provided a complete listing of schools which had been identified as having implemented IGE (1973); however, since publication of the directory, certain schools had dropped out or were identified by researchers in the Wisconsin R & D Center as not having implemented IGE. Thus, the population included only those schools that had implemented IGE for two years or more.

The 959 identified schools were then stratified, for purposes of representativeness, into "city" and "others." Urban schools were defined as those schools which were located in school districts having a population of 200,000 or more. Those schools in cities with less than 200,000 population were classified as others. Computer program APL (1972) was chosen to randomize the two identified populations.

To further ascertain whether or not the population met minimal standards suggested by R & D Center and researchers in the R-3 and Evaluation components, a telephone questionnaire was developed (see

Appendix A) which ascertained that a school meet the following criteria: (1) the entire school was organized into the multiunit pattern; (2) the Instructional Programming Model (IPM) was being applied in both reading and mathematics (reading throughout the school--mathematics only in the selected Instruction and Research [I&R] Unit); (3) the school had an active I&R Unit which met at least once a week; (4) the school had an active Instructional Improvement Committee (IIC) which met at least once a week; (5) the school utilized multiage grouping in each of the I&R Units; (6) the unit leader of the selected unit must not have been new to the unit; (7) no more than one half of the teachers in the selected unit could be new to the unit.

The final sample selection of 42 IGE schools was determined by calling in order the randomized 959 schools to determine if each school met the established criteria and to obtain agreement to participate. After the first 100 schools classified as "other" were called, 33 schools were chosen. Nine urban schools were selected after calling approximately 50 city schools.

Within each of these 42 schools an intermediate unit was selected randomly for testing. Within the intermediate unit a random one-third of the children were assigned to take the Self Observation Scales (SOS, 1973), the instrument that measures the dependent variable in this study; another one-third were assigned to take a mathematics achievement test; and the other one-third were assigned to take a reading achievement test. Both achievement tests were dependent variables in a companion study by Sigurdson (1976). A total of 41 unit leaders, 138 teachers, and 1,409 students participated in this research study.

Instrumentation

In Chapter I, the role expectations for the I&R Unit were presented in the context of social systems theory (1968). The instrument utilized in this study to assess the independent variables, the extent to which the teachers in the I&R Unit met their role expectations, was the I&R Unit Operations Questionnaire (Evers, 1974 and Gramenz, 1974). In addition, a cover sheet communicated the intent of the study to the respondents (see Appendix B). The dependent variable, student affective behavior, was measured by the Self Observation Scales (Intermediate Level-Form C), (Katzenmeyer and Stenner, 1973).

I&R Unit Operations Questionnaire

The I&R Unit Operations Questionnaire provided data for determining the extent of role fulfillment of the staff of the unit. The fifty task items on this measure were developed from a list of performance objectives identified by the Wisconsin R & D Center as the responsibility of the I&R Unit (Klausmeier, et al., 1971). The fifty items were arranged in four categories presented in the performance objectives: Instructional Program, Staff Development, Organizational Operations, and School-Community Relations. The unit leader and teachers of each I&R Unit were asked to rate independently the unit in terms of the degree to which they perceived that their I&R Unit achieved each of the performance objectives. The response set consisted of categories on a five-point Likert scale ranging from "very effectively" to "very ineffectively."

In developing this instrument, Evers (1974) and Gramenz (1974) ascertained content validity by using a six-member jury consisting of IGE researchers, practitioners, and evaluators who judged the clarity, item construction, and the correspondence of items to the performance objectives. Reliability of the I&R Unit Operations Questionnaire was assessed by Evers (1974) who utilized a test of internal consistency for each of the four categories and for the fifty items. Results from her pilot and main study are presented in Table 1.

TABLE 1
RELIABILITY LEVELS FOR THE I&R
UNIT OPERATIONS QUESTIONNAIRE

Categories	Pilot Study N = 109	Main Study N = 673
Instructional Program	.9081	.9329
Staff Development	.8035	.8209
Organizational Operations	.9077	.9283
School-Community Relations	.7885	.7885
Total	.9498	.9589

Through factor analysis, Evers identified and assigned generic names to the following six factors: (1) I&R Unit Instructional Program (I); (2) I&R Unit Organizational Operations (Procedural); (3) I&R Unit School-Community Relations; (4) I&R Unit Organizational Operations (Substantive); (5) I&R Unit Staff Development; and (6) I&R Unit Instructional Program (II). Because there was no conceptual difference that could be identified by Evers for separating the Instructional Program

into two factors, they were combined, and only five factors were used in testing the major hypotheses in this study. The original factors and corresponding items are presented in Table 2.

TABLE 2
FACTORS AND CORRESPONDING ITEMS OF THE
I&R UNIT OPERATIONS QUESTIONNAIRE

Factors	Items
I&R Unit Instructional Program (I)	1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18
I&R Unit Organizational Operations (Procedural)	24, 25, 26, 27, 28, 29 30, 31, 32, 33, 34
I&R Unit School-Community Relations	47, 48, 49, 50
I&R Unit Organizational Operations (Substantive)	35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46
I&R Unit Staff Development	19, 20, 21, 22, 23
I&R Unit Instructional Program (II)	3, 11, 13, 14

Self Observation Scales (SOS)

Measurement of affective outcomes is plagued by a number of methodological problems. When Wylie (1961) first published her comprehensive critique of self concept methodology, she stated that problems existed in self concept measurement because of the bewildering array of hypotheses, research designs, and measuring instruments. There seems to be little agreement concerning an operational definition of self concept, and some definitions lack a clear theoretical basis.

Another problem is the measurement of self concept in too global a manner. Wylie (1974) suggested a need for instrumentation that measures the multi-dimensionality of self concept. In recent years, the use of factor analysis has been increasing in popularity. Katzenmeyer and Stenner (1974a) found that no self concept instrument had been developed that not only was factor analytically developed, but also subject to structural replicability and invariance tests. Wylie (1974) criticized "homemade" measures of self concept that had not given any consideration to the structural integrity of the measures. In answer to this need, Katzenmeyer and Stenner (1976) developed an instrument where the factor structure is highly replicable and satisfactorily invariant across sex and race.

The Intermediate Level of the Self Observation Scales (SOS) developed by Katzenmeyer and Stenner (1973) is a direct, self-report, group administered instrument comprised of sixty items that measure seven areas of student affective behavior in grades four through six. The seven domains are: (1) Self Acceptance, (2) Self Security, (3) Social Maturity, (4) Social Confidence, (5) School Affiliation, (6) Teacher Affiliation, and (7) Peer Affiliation. The intermediate level of the SOS contains 60 dichotomous response items that were normed on 4,600 children from 1,200 classrooms in eighteen cities across the nation.

In the development of the SOS, Katzenmeyer and Stenner (1975) conducted an investigation of existing self concept measures and their rationales. Katzenmeyer and Stenner (1974) concluded that inconsistencies in self concept research and theory existed, and such

inconsistencies are mainly due to the lack of integration or regard for the findings of previous researchers. To meet the need for a valid measure of self concept, factor analysis was used as both an exploratory and an hypothesis testing tool in the development of the SOS.

From the exploratory factor analytic investigations, a pool of 160 items at the Intermediate level were included in the initial SOS test battery. Also included were marker variables from the Children's Personality Questionnaire developed by Porter, Cattell, and Schaie (1959, 1974). These marker variables have been validated as being replicable and invariant structures that appear in different types of instruments and samples with different characteristics.

The final seven intermediate factors are described as follows (Katzenmeyer and Stenner, 1973):

Scale I - Self Acceptance

Children with high scores view themselves positively and attribute to themselves qualities of happiness, importance, and general competence. They see themselves as being valued by peers, family and teachers. Children with low scores see themselves as unhappy, lacking in general competence and of little importance to others. Three items highly related to this scale are: I am a good person (.71); I am a happy person (.52); I am fun to be with (.47).

Scale II - Self Security

Children with high scores report a high level of emotional confidence or stability. They feel that they are in reasonable control of the factors that affect their lives and spend little time worrying over possible troubles. Children with low scores on this scale worry a great deal. They are concerned that something bad may happen and report feelings of nervousness. Three items highly related to this scale are: I worry quite a bit over possible troubles (-.63); I am a very nervous person (.43); I often feel angry for no special reason (-.39).

Scale III - Social Maturity

Children with high scores on this scale know how they are supposed to think and feel in a variety of social situations. They have learned the importance of such notions as 'fair play,' 'sharing,' 'perseverance,' 'helpfulness,' and 'generosity.' Children with low scores on this scale have not learned these notions and are likely to evidence behaviors that most adults would characterize as selfish, inconsiderate, or immature. Three items highly related to this scale are: I like to play only when I am the leader (-.51); I always have to be boss (-.46); I like to see other children happy (.31).

Scale IV - Social Confidence

Children with high scores on this scale feel confident of their ability to relate successfully in social situations. They feel confident that they can make friends easily and that they are valued and enjoyed by their friends. Children with low scores have difficulty making friends, do not feel valued by others and see other people as being more socially adept than themselves. Three items highly related to this scale are: People are picking on me (-.71); Other children are often mean to me (-.59); My classmates like me (.56).

Scale V - School Affiliation

Children with high scores view school as a positive influence in their lives. They enjoy going to school, and they enjoy the activities associated with school. Children with low scores view school as an unhappy place to be. They do not enjoy most school-related activities and are negative about the importance of school in their lives. Three items highly related to this scale are: I like to stay home from school (-.65); Each morning I look forward to coming to school (.65); I feel good when I am at school (.44).

Scale VI - Teacher Affiliation

Children with high scores on this scale like their teachers. They see the teacher as helpful, attentive, understanding, and generous. Children with low scores on this scale see the teacher as arbitrary, inconsiderate of children, and/or a source of emotional pain. Three items highly related to this scale are: I like my teacher (.74); My teacher likes to help me (.72); My teacher is mean (-.68).

Scale VII - Peer Affiliation

Children with high scores on this consider their relationships with other children to be both of high quality and of considerable importance to them. They see themselves as approved of and valued by their peers. They like to be with other children. Children with low scores do not see their peer relationships as an asset. They see other children as unfriendly, they have few friends, and do not accept the responsibilities of friendship easily. Three items highly related to this scale are: I don't have many friends (.-58); The other children in my class are not friendly toward me (-.48); I don't like most of the children in my class (-.48).

The following seven intermediate factors and corresponding items were obtained from National Testing upon request and are presented below:

Scale I - Self Acceptance

1. I am a good person.
2. I think most people want to help me.
3. I make mistakes most of the time when I try to do things.
4. I can give a good report in front of the class.
5. I am proud of my school work.

Scale II - Self Security

1. I worry quite a bit over possible troubles.
2. I often find myself worrying about something.
3. At times I have been worried beyond reason about something that really didn't matter.
4. At times I lose sleep over worry.
5. I am a very nervous person.
6. I often feel angry for no special reason.
7. I often worry about what other children think of me.
8. My feelings are hurt more easily than most people.
9. Most of the time I feel sorry for someone who is hurt.
10. I am about as nervous as other people.

Scale III - Social Maturity

1. I like to play when I am the leader.
2. I always have to be boss.
3. I can only do my work if someone helps me.
4. I often volunteer in school.
5. I like to see other children happy.
6. Most things are too hard to do.

7. School work helps me to learn.
8. I am slow in finishing school work.
9. I want to be a very good student.

Scale IV - Social Confidence

1. I don't have many friends.
2. I can't be depended on.
3. I don't like most of the children in my class.
4. My teachers are not friendly with the children.
5. The other children in my class are not friendly toward me.
6. My teacher does not give me enough time to finish my work.
7. Usually I like to be with other children.

Scale V - School Affiliation

1. Each morning I look forward to coming to school.
2. I like to stay home from school.
3. I feel good when I am at school.
4. I would change schools if I could.
5. I like school better than my friends do.
6. I like to have my teachers ask me questions.
7. I like to do school work at home in the evening.
8. I would rather get books for my birthday than toys or clothes.
9. I like to learn about new things.

Scale VI - Teacher Affiliation

1. My teacher likes to help me.
2. I like my teachers.
3. My teachers are mean.
4. My teachers listen to what I have to say.
5. My teachers make sure I always understand what they want me to do.
6. When I do something wrong, my teachers correct me without hurting my feelings.
7. I usually like my teachers.
8. Grownups are often glad to help me.

Scale VII - Peer Affiliation

1. My classmates like me.
2. I am fun to be with.
3. Other children are often mean to me.
4. People are always picking on me.
5. At school other people really care about me.

6. It is hard for me to make friends.
7. I am easy to like.
8. I am among the last to be chosen for teams.
9. Most people are much better liked than I am.
10. I am lonely very often.
11. I am a happy person.
12. I am a cheerful person.

On the Intermediate level the following split-half reliabilities were then obtained: Self Acceptance .85, Self Security .81, Social Maturity .80, Social Confidence .73, School Affiliation .79, Teacher Affiliation .74, and Peer Affiliation .85 (Katzenmeyer and Stenner, 1975). To investigate the predictive and construct validity of the SOS, Katzenmeyer and Stenner conducted studies analyzing the relationships between self concept and race (1976), socioeconomic status (1976), reading achievement (1976), and classroom behavior (1975). Results from these studies revealed that the Self Observation Scales are valid and reliable for analyzing such relationships.

Data Collection

After a school was selected for possible participation, because of the meeting of specified criteria and the expressing of an interest to participate, a general information letter was sent to the principal (see Appendix C) so that he/she could further explain the details of the research study and gain approval of the staff. After approval was obtained, and an intermediate unit was selected, a procedural letter was sent to each school explaining what was required of the school before and during the testing (see Appendix D). The I&R Unit Operations Questionnaire was one of several instruments that was sent prior to the actual testing of the children. The other instruments for the teacher,

unit leader, and the principal were included as part of the data needed by Mendenhall (1976), Feldman (1976), Rossmiller and Geske (1976), and Sigurdson (1976) in companion studies. The completion of these instruments prior to visiting the school was requested of the staff and the principal. Individual envelopes were provided for each respondent to seal and deliver to the researcher upon his/her visit to the school to test the children.

Prior to the testing, the schools were also requested to send a list of the students in the selected intermediate unit, including the year and month of birth, sex, and grade level equivalent of each child in the unit. This was necessary so that a randomly selected one-third of the children could be assigned to the SOS testing group, and the other two-thirds of the children could be assigned to the mathematics or reading testing groups.

The actual testing procedure for the children was clearly outlined in the procedural letter which explained that teachers in each unit would be administering the achievement tests while a researcher from the Wisconsin R & D Center would be administering the SOS (see Appendix D). Total testing took approximately two and one-half hours, including directions.

After the entire sample of 42 schools was confirmed for testing, schools were identified geographically, and each was assigned to one of four researchers who were utilizing the same sample population for companion studies. Arrangements were made to visit all of the 42 schools between the later part of November 1975 and the second week in February 1976. Most of the data were collected in January and in February, 1976.

Data Analysis

The statistical method that was utilized to test seven of the major hypotheses of the study was multiple regression as described by Kerlinger (1973). This method of analysis provided a procedure to determine the strength of the relationship between the independent variables, which are the subscales of the I&R Unit Operations measure, and the dependent variables which are the subscales of student affective behavior.

A stepwise regression procedure was used to determine the relative contribution of each independent variable in explaining the dependent variables. This analysis was performed through the use of PROGRAM WISE*LIB. SETSTP (Stofflet and Spuck, 1971), a computer program available at the University of Wisconsin, Wisconsin Information Systems for Education. The program was processed on the Univac 1108 Computer at the Madison Academic Computing Center (MACC) at the University of Wisconsin.

The other seven major hypotheses tested used a Pearson product-moment correlation coefficient which provided a procedure and an index for testing the strength of the correlation between the two variables in each of the hypotheses. PROGRAM WISE*STAT. DISTX (Spuck, et al., 1971), a computer program available at the University of Wisconsin, Wisconsin Information Systems for Education, performed the analysis. The probability level for all tests of statistical significance was set at .05.

CHAPTER III

ANALYSIS OF THE DATA

This chapter is composed of two sections. The initial section presents the results of the multiple regression analysis used to test the first seven major hypotheses comparing the subscales of the I&R Unit effectiveness and the various measures of self concept. The second section presents the results of the correlation used to test the last seven major hypotheses.

Tests of the First Seven Major Hypotheses

The first seven major hypotheses of the study stated that there was no significant multiple correlation between six I&R Unit effectiveness scales and seven scales of student affective behavior. Multiple regression was the statistical technique applied to determine the strength of the relationship between a dependent variable and two or more independent variables.

In the multiple regression analysis, a forward stepwise procedure was used in which the independent variable which explained the dependent variable to the greatest extent was entered first, followed by the variable that accounted for the next greatest variance which explained the dependent variable, and so forth. PROGRAM WISE*LIB. SETSTP, a computer program available at the University of Wisconsin, Wisconsin Information Systems for Education was used to perform this analysis.

Results of the regression analyses are presented in Tables 7-13 composed of two sections. The first section presents, for each step, the name of the independent variable entered into the equation, the multiple correlation coefficient, the coefficient of determination which is the percentage of the variance of the dependent variable explained by the independent variable, the F test for significance of variance explained by the combination of the independent variables, and the partial F test which tests whether or not the introduction of the new variable at that step resulted in a significant increase in the coefficient of determination.

Presented in the second section is the standardized regression coefficient for each variable which represents the relative contribution of each independent variable to the total regression equation. At the first step, the coefficient for the variable entered is shown; at the second step, the coefficient for the first variable and the variable entered at that step are shown, and so forth.

An asterisk marks statistically significant relationships between the dependent variable and the independent variables. The .05 level of significance was utilized for both the overall F test and the partial F value.

Table 3 provides descriptive statistics which include means, standard deviations, correlations, skew, and kurtosis for dependent and independent variables. Table 4 presents the means, standard deviations, and correlation coefficients for the independent variables. Table 5 provides these same data for the dependent variables. It is of significant interest to note that the mean scores for each of the SOS subscales

TABLE 3
DESCRIPTIVE STATISTICS OF SAMPLE DISTRIBUTIONS

Variable Name	Mean	S.D.	Skew	Probability of Skew	Kurtosis	Probability of Kurtosis
1. I&R Unit Instructional Program (Reading)	3.7713	.4754	.2297	.8133	-.3638	.7171
2. I&R Unit Instructional Program (Mathematics)	3.7972	.5002	.0515	.9579	-.9897	.6766
3. I&R Unit Organizational Operations (Procedural)	3.8772	.6232	-.7401	.5338	-.3963	.6946
4. I&R Unit Organizational Operations (Substantive)	3.3466	.5746	1.0282	.3047	-.4551	.6541
5. I&R Unit School-Community Relations	3.8014	.6119	-.2798	.7766	-1.3565	.1717
6. I&R Unit Staff Development	3.3413	.7326	-1.7042	.0847	.6332	.5340
7. Social Acceptance	50.9029	2.9364	-1.7284	.0803	-.6591	.5172
8. Self Security	49.2781	2.1823	1.7719	.0729	.4231	.6761
9. Social Maturity	49.7262	4.2220	-3.5365	.0007	2.0640	.0368
10. Social Confidence	54.1250	3.0837	-.4363	.6670	-1.3934	.1600
11. School Affiliation	52.2452	3.4259	.6966	.5066	-.8245	.5850
12. Teacher Affiliation	50.7169	3.3143	-2.1786	.0277	.2363	.8084
13. Peer Affiliation	49.9836	3.0277	-1.1484	.2496	-.4829	.6350

TABLE 4

MEANS, STANDARD DEVIATIONS, AND CORRELATIONS FOR THE INDEPENDENT VARIABLES

Variable Name	Mean	Standard Deviation	1	2	3	4	5	6
1. I&R Unit Instructional Program (Reading)	3.77	.475	1.000					
2. I&R Unit Instructional Program (Mathematics)	3.80	.501	.761*	1.000				
3. I&R Unit Organizational Operations (Procedural)	3.88	.623	.481*	.270	1.000			
4. I&R Unit Organizational Operations (Substantive)	3.35	.575	.669*	.644*	.611*	1.000		
5. I&R Unit School-Community Relations	3.81	.612	.668*	.521*	.681*	.711*	1.000	
6. I&R Unit Staff Development	3.34	.733	.505*	.543*	.514*	.639*	.478*	1.000

*Significant at the .05 level

TABLE 5

MEANS, STANDARD DEVIATIONS, AND CORRELATIONS FOR THE DEPENDENT VARIABLES

Variable Name	Mean	Standard Deviation	1	2	3	4	5	6	7
1. Self Acceptance	50.90	2.936	1.000						
2. Self Security	49.28	2.182	.550*	1.000					
3. Social Maturity	49.73	4.222	.720*	.376*	1.000				
4. Social Confidence	54.13	3.084	.610*	.455*	.770*	1.000			
5. School Affiliation	52.25	3.426	.184	.146	-.440*	-.206	1.000		
6. Teacher Affiliation	50.72	3.314	.880*	.412*	.815*	.711*	.056	1.000	
7. Peer Affiliation	49.98	3.028	.901*	.723*	.785*	.735*	.005	.805*	1.000

*Significant at the .05 level

indicate that students in ICE schools score on the average similar to other school populations. The mean score for the national norm was 50 with a standard deviation of 10. All ICE schools scored within one standard deviation of the national mean. Table 6 presents the correlations between the dependent variables and the independent variables. These data are presented in conjunction with the overall data analysis.

The hypotheses that there is no significant multiple correlation between the six subscales of I&R Unit effectiveness and student affective behavior were tested using seven dependent measures of self concept: Social Acceptance, Self Security, Social Maturity, Social Confidence, School Affiliation, Teacher Affiliation, and Peer Affiliation. The analyses of these relationships are presented in Tables 7-13.

Table 7 illustrates the relationship between the dependent variable, Self Acceptance and the effectiveness of the independent variables of I&R Unit Instructional Program (Reading), I&R Unit Instructional Program (Mathematics), I&R Unit Organizational Operations (Procedural), I&R Unit Organizational Operations (Substantive), I&R Unit School-Community Relations, and I&R Unit Staff Development. Twenty-four percent of the variations in Self Acceptance was explained by the six independent measures and at steps 2, 3, and 4 the variation was significant. The partial F value indicated a significant increase in the coefficient of determination at steps 1 and 2, which was the introduction of I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural). Twenty-one percent of the Self Acceptance variation was explained by these two variables and this variation was highly significant. The standardized regression coefficient,

TABLE 6
CORRELATIONS BETWEEN INDEPENDENT VARIABLES AND DEPENDENT VARIABLES

Variable Name Independent	Dependent						
	Self Acceptance	Self Security	Social Maturity	Social Confidence	School Affiliation	Teacher Affiliation	Peer Affiliation
1. I&R Unit Instruc- tional Program (Reading)	-.004	.065	-.027	.010	.021	-.004	-.026
2. I&R Unit Instruc- tional Program (Mathematics)	.140	.026	-.008	-.093	.119	.106	.051
3. I&R Unit Organi- zational Opera- tions (Procedural)	-.150	.102	-.015	.089	-.269	-.151	-.076
4. I&R Unit Organi- zational Opera- tions (Substantive)	.247	.173	.240	.095	-.150	.252	
5. I&R Unit School- Community Relations	-.014	.083	.142	.096	-.233	.025	.017
6. I&R Unit Staff Development	.060	.011	-.019	-.120	-.109	-.007	-.041

TABLE 7
REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF SELF ACCEPTANCE

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	I&R Unit Organizational Operations (Substantive)	.2470	.0610	.115	2.598*
2	I&R Unit Organizational Operations (Procedural)	.4534	.2056	.011*	7.099*
3	I&R Unit Instructional Program (Reading)	.4889	.2391	.015*	.204
4	I&R Unit School-Community Relations	.4916	.2417	.033*	.126
5	I&R Unit Staff Development	.4928	.2429	.064	.059
6	I&R Unit Instructional Program (Mathematics)	.4934	.2434	.113	.025

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Independent Variables					
	1	2	3	4	5	6
1	.2470					
2	.5406	-.4805				
3	.6891	-.4519	-.2480			
4	.7140	-.4209	-.2219	-.0863		
5	.7369	-.4101	-.2146	-.0922	.0473	
6	.7255	-.3966	-.2391	-.0943	-.0560	.0413

Significant at the .05 level

however, indicated a positive relationship for the variable I&R Unit Organizational Operations (Substantive) and a negative relationship for the variable I&R Unit Organizational Operations (Procedural). The additional four independent variables only added an additional four percent increase. The correlation coefficients (Table 6) between Self Acceptance and the six independent variables were not significant at the proposed .05 level of probability. Of the reported levels of significance, I&R Unit Operations (Substantive) correlated the highest with .11 level of significance. I&R Unit Operations (Procedural) correlated negatively at the insignificant level of .66.

Table 8 illustrates the relationship between the dependent variable of Self Security and the six independent variables. Six percent of the variation in Self Security was explained by the six independent measures of I&R Unit Instructional Program (Reading), I&R Unit Instructional Program (Mathematics), I&R Unit Organizational Operations (Procedural), I&R Unit Organizational Operations (Substantive), I&R Unit School-Community Relations, and I&R Unit Staff Development. Organizational Operations (Substantive) and Staff Development accounted for five percent of the variation, while the other four variables added less than one percent of the variation. The probability level did not meet the .05 level of significance for any of the variables entered. Similarly, the partial F value did not indicate a significant increase in the coefficients of determination at any of the six steps. The correlation coefficients (Table 6) between Self Security and the six independent variables did not indicate a .05 level of significance.

TABLE 8
REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF SELF SECURITY

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	I&R Unit Organizational Operations (Substantive)	.1734	.0301	.272	1.239
2	I&R Unit Staff Development	.2165	.0469	.392	.688
3	I&R Unit Instructional Program (Mathematics)	.2329	.0542	.543	.296
4	I&R Unit School-Community Relations	.2367	.0560	.701	.070
5	I&R Unit Organizational Operations (Procedural)	.2378	.0565	.824	.020
6	I&R Unit Instructional Program (Reading)	.2380	.0566	.905	.003

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Independent Variables					
	1	2	3	4	5	6
1	.1734					
2	.2810	-.1686				
3	.3388	-.1430	-.1151			
4	.3770	-.1420	-.1087	-.0604		
5	-.3671	-.1511	-.0972	-.0790	.0352	
6	.3661	-.1505	-.1072	-.0833	.0328	.0174

*Significant at the .05 level

Table 9 illustrates the relationship between Social Maturity and the six independent variables. Twenty-one percent of the variation in Social Maturity was explained by the six independent measures of I&R Unit Instructional Program (Reading), I&R Unit Instructional Program (Mathematics), I&R Unit Organizational Operations (Procedural), I&R Unit Organizational Operations (Substantive), I&R Unit School-Community Relations, and I&R Unit Staff Development. The partial F value did not indicate a significant increase in the coefficient of determination at any step. At step 2 there was an increase in the coefficient of determination at a .10 level of significance. The correlation coefficients (Table 6) indicate insignificant relationships between Social Maturity and the six independent variables.

Table 10 illustrates the relationship between the dependent variable, Social Confidence, and the six measures of I&R Unit Instructional Program (Reading), I&R Unit Instructional Program (Mathematics), I&R Unit Organizational Operations (Procedural), I&R Unit Organizational Operations (Substantive), I&R Unit School-Community Relations, and I&R Unit Staff Development. Nine percent of the variation in Social Confidence was explained by the six independent variables. Six percent of the nine percent was explained by the variables of I&R Unit Staff Development and I&R Unit Organizational Operations (Substantive). The partial F value did not indicate a significant increase in the coefficient of determination at any of the steps. The correlation coefficient (Table 6) similarly did not reveal any significant relationships between the dependent variable, Social Confidence, and the six independent variables.

TABLE 9
REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF SOCIAL MATURITY

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	I&R Unit Organizational Operations (Substantive)	.2405	.0578	.125	2.455
2	I&R Unit Instructional Program (Reading)	.3494	.1220	.079	2.853
3	I&R Unit Staff Development	.3986	.1589	.084	1.665
4	I&R Unit Organizational Operations (Procedural)	.4227	.1787	.113	.893
5	I&R Unit School-Community Relations	.4422	.1956	.148	.754
6	I&R Unit Instructional Program (Mathematics)	.4575	.2093	.193	.607

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Independent Variables					
	1	2	3	4	5	6
1	.2405					
2	.4685	-.3409				
3	.6058	-.3056	-.2518			
4	.6820	-.2868	-.2162	-.1825		
5	.6103	-.3557	-.1988	-.2651	.2211	
6	.6679	-.2323	-.1550	-.3330	.2314	-.2078

*Significant at the .05 level

TABLE 10
REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF SOCIAL CONFIDENCE

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	I&R Unit Staff Development	.1199	.0144	.450	.583
2	I&R Unit Organizational Operations (Substantive)	.2532	.0641	.275	2.073
3	I&R Unit Instructional Program (Mathematics)	.2957	.0874	.318	.970
4	I&R Unit School-Community Relations	.3035	.0921	.453	.191
5	I&R Unit Instructional Program (Reading)	.3053	.0932	.599	.045
6	I&R Unit Organizational Operations (Procedural)	.3056	.0934	.728	.008

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Independent Variables					
	1	2	3	4	5	6
1	-.1199					
2	-.3050	.2899				
3	-.2595	.3927	-.2047			
4	-.2612	.3308	-.2150	.0979		
5	-.2612	.3249	-.2465	.0787	.0596	
6	-.2669	.3191	-.2372	.0684	.0555	.0220

*Significant at the .05 level

Table 11 illustrates the relationship between the dependent variable, School Affiliation, and the six independent variables. Seventeen percent of the variation in School Affiliation was explained by the six independent measures of I&R Unit Instructional Program (Reading), I&R Unit Instructional Program (Mathematics), I&R Unit Organizational Operations (Procedural), I&R Unit Organizational Operations (Substantive), I&R Unit School-Community Relations, and I&R Unit Staff Development. Of the sixteen percent, eleven percent of the variation in School Affiliation was explained by I&R Unit Organizational Operations (Procedural) and I&R Unit Instructional Program (Mathematics). The correlation coefficients (Table 6) and the standardized regression coefficients did not indicate significant (.05) positive relationships between the dependent variable and any of the independent variables. The independent variable I&R Unit Organizational Operations (Procedural) correlated negatively at the .08 level of probability.

Table 12 illustrates the relationship between the dependent variable, Teacher Affiliation, and the six independent variables. Twenty-six percent of the variation in Teacher Affiliation was explained by the six independent measures of I&R Unit Instructional Program (Reading), I&R Unit Instructional Program (Mathematics), I&R Unit Organizational Operations (Procedural), I&R Unit Organizational Operations (Substantive), I&R Unit School-Community Relations, and I&R Unit Staff Development. Twenty-one percent of the variation in Teacher Affiliation was explained by I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural), and this

TABLE 11
REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF SCHOOL AFFILIATION

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	I&R Unit Organizational Operations (Procedural)	.2690	.0723	.085	.312
2	I&R Unit Instructional Program (Mathematics)	.3344	.1118	.099	1.732
3	I&R Unit School-Community Relations	.3823	.1461	.108	1.527
4	I&R Unit Instructional Program (Reading)	.3936	.1549	.172	.385
5	I&R Unit Organizational Operations (Substantive)	.4036	.1629	.247	.343
6	I&R Unit Staff Development	.4073	.1659	.350	.125
STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP					
Step No.	Independent Variables				
	1	2	3	4	5
1	-.2690				
2	-.3246	.2063			
3	-.1567	.3111	-.2881		
4	-.1804	.2127	-.3334	.1687	
5	-.1355	.2706	-.2913	.1768	-.1524
6	-.1108	.2966	-.3015	.1722	-.1254
					-.0761

*Significant at the .05 level

TABLE 12
REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF TEACHER AFFILIATION

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	I&R Unit Organizational Operations (Substantive)	.2524	.0637	.107	2.721
2	I&R Unit Organizational Operations (Procedural)	.4605	.2120	.010*	9.371*
3	I&R Unit Instructional Program (Reading)	.4967	.2468	.012*	1.753
4	I&R Unit Staff Development	.5117	.2619	.021*	.757
5	I&R Unit Instructional Program (Mathematics)	.5120	.2622	.044*	.016
6	I&R Unit School-Community Relations	.5120	.2622	.082	.000

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Independent Variables					
	1	2	3	4	5	6
1	.2524					
2	.5498	-.4866				
3	.7010	-.4575	-.2527			
4	.7747	-.4273	-.2336	-.1642		
5	.7841	-.4373	-.2139	-.1575	-.0323	
6	.7834	-.4382	-.2146	-.1573	-.0324	.0024

*Significant at the .05 level

variation was highly significant at step 2. The introduction of the other four independent variables only increased the coefficient of determination by four percent. The partial F value indicated a significant increase in the coefficient of determination at step 2 only. The correlation coefficients (Table 6) between Teacher Affiliation and I&R Unit Organizational Operations (Substantive) was significant at the .10 level of probability. The correlation coefficient for I&R Unit Organizational Operations (Procedural) was not significant (.66). The standardized regression coefficients also indicate a negative relationship between Teacher Affiliation and I&R Unit Organizational Operations (Procedural), and a positive relationship between I&R Unit Organizational Operations (Substantive).

Table 13 illustrates the relationship between the dependent variable Peer Affiliation and the six independent variables. Fourteen percent of the variation in Peer Affiliation was explained by the six independent measures of I&R Unit Instructional Program (Reading), I&R Unit Instructional Program (Mathematics), I&R Unit Organizational Operations (Procedural), I&R Unit Organizational Operations (Substantive), I&R Unit School-Community Relations, and I&R Unit Staff Development. The partial F value did not indicate a significant increase in the coefficient of determination at any step. The correlation coefficients (Table 6) between Peer Affiliation and the six independent variables were not significant.

The regression analysis for the dependent variables Self Acceptance (Table 7) and Teacher Affiliation (Table 12) both correlated significantly at step 2, step 1 being I&R Unit Organizational Operations

TABLE 13
REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF PEER AFFILIATION

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	I&R Unit Organizational Operations (Substantive)	.1809	.0327	.252	1.354
2	I&R Unit Organizational Operations (Procedural)	.2970	.0882	.165	2.372
3	I&R Unit Instructional Program (Reading)	.3423	.1171	.187	1.246
4	I&R Unit Staff Development	.3702	.1370	.231	.852
5	I&R Unit School-Community Relations	.3772	.1423	.331	.221
6	I&R Unit Instructional (Program)	.3772	.1423	.461	.828

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Independent Variables					
	1	2	3	4	5	6
1	.1809					
2	.3628	-.2975				
3	.5008	-.2709	-.2307			
4	.5854	-.2363	-.2088	-.1884		
5	.6254	-.1901	-.1703	-.1981	-.1236	
6	.6249	-.1895	-.1715	-.1985	-.1238	.0021

*Significant at the .05 level

(Substantive) and step 2, I&R Unit Organizational Operations (Procedural). However, I&R Unit Organizational Operations (Procedural) correlated negatively at an insignificant level of probability with both dependent variables.

In summary, five of the seven models generally did not reveal any statistically significant relationship between the dependent and independent variables. Two of the models, those dealing with (Student) Self Acceptance and Teacher Affiliation correlated significantly at step 2. The amount of variation in each of the dependent variables explained by the independent variables were: Self Acceptance, 24.29 percent; Self Security, 5.66 percent; Social Maturity, 20.93 percent; Social Confidence, 9.34 percent; School Affiliation, 16.59 percent; Teacher Affiliation, 26.22 percent; and Peer Affiliation, 14.23 percent.

Tests of the Last Seven Hypotheses

The last seven hypotheses presented in Chapter I were tested using a Pearson product-moment correlation to determine the strength of the linear relationship between the variables considered in each of the hypotheses. This analysis was performed by PROGRAM WISE*STAT. DISTX which produced means, standard deviations, correlations, skew, and kurtosis (Table 14).

Table 15 describes the correlation coefficients obtained between each of the seven self concept measures and Total I&R Unit Effectiveness. The probability that the coefficients would occur purely by chance is indicated within the parentheses next to each coefficient. Of these seven hypotheses, all correlated non-significantly with the independent variable of Total I&R Unit Effectiveness.

TABLE 14

DESCRIPTIVE STATISTICS FOR TOTAL I&R UNIT EFFECTIVENESS

Independent Variable	Mean	S.D.	Skew	Probability of Skew	Kurtosis	Probability of Kurtosis
Total I&R Unit Effectiveness	3.6778	.4495	.4555	.6538	-.4724	.6422

TABLE 15

CORRELATION COEFFICIENTS OBTAINED FOR TOTAL I&R
UNIT EFFECTIVENESS AND THE SEVEN DEPENDENT VARIABLES

Dependent Variable	Independent
	Total I&R Unit Effectiveness
1. Self Acceptance	.076 (.637)
2. Self Security	.096 (.554)
3. Social Maturity	.054 (.735)
4. Social Confidence	.007 (.962)
5. School Affiliation	-.084 (.603)
6. Teacher Affiliation	.062 (.700)
7. Peer Affiliation	.029 (.851)

CHAPTER IV

SUMMARY, FINDINGS, CONCLUSIONS, AND IMPLICATIONS

This chapter consists of three sections. The initial section contains a summary of the study as presented in the first three chapters. Section two presents the findings and conclusions of the study. The chapter concludes with implications for educational practice and further research.

Summary

Since 1965, the Wisconsin Research and Development Center for Cognitive Learning and other cooperating agencies have been developing and refining Individually Guided Education (IGE) with its organizational structure of the multiunit school. IGE is a comprehensive system designed to produce higher educational achievement through providing effectively for differences among students in rate of learning, learning styles, and level of motivation (Klausmeier, 1971). IGE also claims that students should also develop healthy self-concepts (Klausmeier, 1977).

The purpose of this study was to investigate the relationship between the degree of effectiveness of the I&R Unit as defined in the context of performance objectives assigned to the I&R Unit, and student affective behavior which was measured by seven different constructs.

The study involved three bodies of theory: systems theory as it conceptualizes inputs, processes, and outputs of an organization; social

systems theory as it defines roles, expectations, and behavior; and self concept theory as basic to the study. A review of the pertinent literature related to these theories and a presentation of IGE concepts provided support for the underlying assumption of the study: there is a positive correlation between the degree of role achievement of the I&R Unit (process) and student affective behavior (goal).

The major question posed in chapter I of this study was: Is there a significant multiple correlation between the effectiveness of the I&R Unit (variously measured) and student affective behavior (variously measured)? To answer this question, fourteen null hypotheses were formulated and tested. The first seven hypotheses were tested by the use of a multiple regression technique, while the last seven were tested using a Pearson product-moment correlation.

Chapter II presented a definition of the population, a description of the procedures for sample selection, a discussion of the instrumentation utilized, including validity and reliability, a description of the data collection procedure, and the statistical techniques employed in analyzing the data. Data were collected from 42 schools including 41 unit leaders, 138 teachers, and 1,409 students. These schools were randomly selected from 959 schools that were identified as having implemented IGE for two years or more. Minimal criteria was established for sample inclusion, and an intermediate unit was chosen randomly for testing from within each selected school.

The instrumentation chosen for gathering data concerning I&R Unit effectiveness was the I&R Unit Operations Questionnaire (Evers, 1974 and Gramenz, 1974). The Self Observation Scales (SOS), (Katzenmeyer and

Stenner, 1973) were used to measure student affective behavior in seven domains.

Chapter III presented the results of the statistical analyses of the collected data.

Findings and Conclusions

This section contains an analysis of the major hypotheses being tested in this study and the conclusions drawn from these tests. The first seven hypotheses utilized a multiple stepwise regression analyses while the concluding seven hypotheses employed the use of a Pearson product-moment correlation. The probability level of all tests of statistical significance was established at .05.

Findings

The first seven hypotheses were tested using seven different measures of student affective behavior. The major findings of this multiple regression analyses were:

Hypothesis 1: There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Self Acceptance.

Finding: In the regression equation, I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural) contributed significantly to the variance in (Student) Self Acceptance.

Hypothesis 2: There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Self Security.

Finding: No significant relationship was found between (Student) Self Security and I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development.

Hypothesis 3: There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Social Maturity.

Finding: No significant relationship was found between (Student) Social Maturity and I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development.

Hypothesis 4: There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Social Confidence.

Finding: No significant relationship was found between (Student) Social Confidence and I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development.

Hypothesis 5: There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) School Affiliation.

Finding: No significant relationship was found between (Student) School Affiliation and I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development.

Hypothesis 6: There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Teacher Affiliation.

Finding: In the regression equation, I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural) contributed significantly to the variance in (Student) Teacher Affiliation.

Hypothesis 7: There is no significant multiple correlation between the effectiveness of the I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Peer Affiliation.

Finding: No significant relationship was found between (Student) Peer Affiliation and I&R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development.

The major findings of the Pearson product-moment correlations were:

Hypothesis 8: There is no significant relationship between Total I&R Unit Effectiveness and (Student) Self Acceptance.

Finding: No significant relationship was found between Total I&R Unit Effectiveness and (Student) Self Acceptance.

Hypothesis 9: There is no significant relationship between Total I&R Unit Effectiveness and (Student) Self Security.

Finding: No significant relationship was found between Total I&R Unit Effectiveness and (Student) Self Security.

Hypothesis 10: There is no significant relationship between Total I&R Unit Effectiveness and (Student) Social Maturity.

Finding: No significant relationship was found between Total I&R Unit Effectiveness and (Student) Social Maturity.

Hypothesis 11: There is no significant relationship between Total I&R Unit Effectiveness and (Student) Social Confidence.

Finding: No significant relationship was found between Total I&R Unit Effectiveness and (Student) Social Confidence.

Hypothesis 12: There is no significant relationship between Total I&R Unit Effectiveness and (Student) School Affiliation.

Finding: No significant relationship was found between Total I&R Unit Effectiveness and (Student) School Affiliation.

Hypothesis 13: There is no significant relationship between Total I&R Unit Effectiveness and (Student) Teacher Affiliation.

Finding: No significant relationship was found between Total I&R Unit Effectiveness and (Student) Teacher Affiliation.

Hypothesis 14: There is no significant relationship between Total I&R Unit Effectiveness and (Student) Peer Affiliation.

Finding: No significant relationship was found between Total I&R Unit Effectiveness and (Student) Peer Affiliation.

Conclusions

Based on the findings of the study, the following conclusions were drawn with respect to student affective behavior:

1. There is no significant multiple correlation between any of the independent variables and (Student) Self Security, Social Maturity, Social Confidence, School Affiliation, and Peer Affiliation.
2. A significant amount of variance in (Student) Self Acceptance was explained by I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural).
3. A significant amount of variance in (Student) Teacher Affiliation was explained by I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural).
4. There is no significant relationship between I&R Unit Total effectiveness and any of the measures of student affective behavior.

The conclusions that were drawn from the study are limited to the population of IGE schools from which the sample was drawn. The

conclusions are restricted by the limitation of the self report instrument utilized. The generalizability of a study composed of these limitations must be constrained by the degree the reader can accept the assumptions underlying both the theoretical framework and the statistical procedures employed in this study.

Implications for Practice

This study asked the question, "Is there any significant correlation between I&R Unit performance and student self concept?" It did not ask whether ICE had an effect on self concept. This type of question could only be answered through an experimental approach which would demand "pre" and "post" testing of the variables in question. This study's findings generally did not reveal any significant positive or negative relationships between the tasks performed by the I&R Unit and the self concept of students in that unit.

Educators should be cautioned not to infer from correlational research findings conclusions concerning cause and effect. It is likewise dangerous to imply that the tasks performed by the I&R Unit do not influence student self concept. What is known from this study is that given the 42 schools selected, given the specific instrumentation utilized, given the procedures employed to obtain the information, the correlation between various measures of I&R Unit effectiveness and student self concept did not reveal any significant relationships. This does not preclude the possibility that given 42 different schools and given the use of different methods of obtaining staff and student data, such as observations and interviews, that the correlations might have been different.

A second implication of this study comes from informal observational data that supported the notion that those schools that valued positive self concept for children were schools that scored high on most measures of self concept. ICE is a systematic approach in achieving the school's goals or objectives. If the school, particularly the unit in question, values positive self concept and sets goals to promote such, then the school or unit should partake in an evaluation approach which first obtains baseline data relative to the degree of implementation of ICE concepts and the degree of attainment of the stated student objectives. Then after a given period of time, an evaluation should take place in terms of the goals achieved. This type of evaluation approach was realized from the awarenesses gained from researchers collecting personally the data from the various schools.

A third implication comes from the conclusions drawn concerning (Student) Self Acceptance and Teacher Affiliation. The multiple regression analysis of both these dependent variables indicated significant relationships with I&R Unit Organizational Operations (Substantive) and I&R Unit Organizational Operations (Procedural) combined. However, I&R Unit Organizational Operations (Procedural) was insignificantly (.66) correlated negatively to each of the two dependent variables. A further examination of the eleven corresponding items of this subscale reveals that all of the items refer in some manner to I&R Unit meetings. The items specifically refer to when the meetings are held, how often they are held, who attends the meetings, and are minutes taken and distributed. Most of these items could be grouped as "busy work." None of these tasks

directly involve children. Perhaps the negative correlation that exists comes from the element of time that is inherent in each of the items. If an I&R Unit is effectively accomplishing the tasks specified in the subscale of I&R Unit Organizational Operations (Substantive) which includes such major performance objectives as the grouping of students, the assessing of unit members' expertise in subject area and in instructing various sizes and kinds of groups, and the monitoring of each student in the unit by a particular teacher, it seems reasonable to assume that there often isn't enough time left to effectively accomplish other less major tasks. This form of reasoning is merely one possible explanation for the above mentioned relationship. It is just as logical to assume that this event happened by chance alone and has no significant underlying rationale. With a level of probability of .66 this possibility is highly likely.

The final implication deals with the information obtained from the national norms of the SOS. The descriptive data revealed that children in IGE schools score, on the average, similar to children in other school populations (Table 3). To practitioners this implies that generally children in IGE schools, as defined in this study, have "normal" self concepts, "normal" referring to the national norms. This comparison of IGE schools with other school populations, although not part of the hypotheses in this study, should be of importance to educators who are faced with questions concerning the worth of the ICE process. Certainly, these results indicate that the implementation of ICE is congruent with the development of student self concept.

Implications for Further Research

Several issues which warrant further research are detailed in Appendix E. The major questions which educational researchers will find to be of interest are as follows:

1. Would the same relationships exist if the independent and dependent variables were measured using different instrumentation and/or techniques (observation/interview)?
2. Would the results of this study be similar if the goals of each school were taken into consideration?
3. Would the results of this study be similar if the element of time were introduced in the degree of I&R Unit effectiveness, i.e., was a unit "highly effective" for one month or one year?
4. Would the results of this study be similar if the criteria for selection were different?
5. Is student self concept related to various teacher attitudes, e.g., job satisfaction?
6. Would the results of this study be similar if weightings were placed on the I&R Unit Operations items which reflect the importance of such items to the dependent variable?
7. Is student self concept in IGE schools related to reading and mathematics achievement?
8. Would case studies of the same phenomena reveal similar relationships to those found in this study?
9. Would the results of this study be similar across a different sample of schools?
10. Would the results of this study be similar if greater attention were given to implementation of the IPM when correlating IGE with the dependent variable?
11. Would the results of this study be similar if such controls as: size of school, student-teacher ratio, socioeconomic level of parents, educational background of parents, etc., were taken into account?
12. Would the results be similar if the study controlled for the chronological age of students?

In conclusion, it is hoped that this study will provide insights into future research endeavors which seek to understand better the organizational operations of the ICE multiunit school and how they relate to organizational goals.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Allport, G. W. Personality: a psychological interpretation. New York: Holt, Rinehart, and Winston, 1937.
- APL/1100 Reference Manual, 1972. Madison, Wisconsin: Academic Computing Center, University of Wisconsin.
- Bobbitt, F. Some general principles of management applied to the problems of city school systems. In The supervision of city schools, Twelfth Yearbook of the National Society for the Study of Education, Part I, 1913, 7.
- Brookover, W. B., and Paterson, A. Self-concept of ability and school achievement. Sociology of Education, 1964, 37, 271-78.
- Caplin, M. D. The relationship between self-concept and academic achievement. Journal of Experimental Education, Spring, 1969, XXXVII, 13.
- Churchman, C. W., Ackoff, R. L., and Arnoff, E. L. Introduction to operations research. New York: Wiley, 1957.
- Cooley, C. H. Human nature and the social order. New York: Charles Scribner's Sons, 1902.
- Edwards, F. H. The study of affective change in elementary schools implementing individually guided education. Unpublished doctoral dissertation, University of North Carolina, 1972.
- Evers, N. A. An analysis of the relationship between the effectiveness of the multiunit elementary school's instruction and research unit and interpersonal behaviors. Unpublished doctoral dissertation, University of Wisconsin-Madison, 1974.
- Fayol, H. Administration industrielle et generale, [General and industrial management], translated by C. Storrs, 1949.
- Feldman, R. H. Involvement in and satisfaction with decision making related to staff and student behavior in IGE schools. Unpublished doctoral dissertation, University of Wisconsin-Madison, 1976.
- Felkner, D. W. Building positive self-concepts. Minneapolis, Minnesota: Burgess Publishing Company, 1974.

- Fitts, W. H. and Richard, W. C. The self concept, self-actualization, and rehabilitation: an overview. In W. H. Fitts, et al., Self concept and self actualization, Research Monograph, No. 3. Tennessee: Dede Wallace Center, 1971.
- Getzels, J. W., and Thelen, H. A. The dynamics of instructional groups. Chicago: University of Chicago Press, 1960.
- Getzels, J. W., Lipham, J. M., and Campbell, R. F. Educational administration as a social process. New York: Harper and Row, 1968.
- Getzels, J. W., and Guba, E. G. Social behavior and the administrative process. School Review, Winter, 1957, 65, 423-441.
- Gilbreth, Frank. Motion study. New York: Van Nostrand Reinhold, 1911.
- Glaser, W. Schools without failure. New York: Harper and Row, 1969.
- Gordon, C., and Gergen, K. J. (Eds.), The self and social interaction, Vol. 1. New York: Wiley, 1968.
- Gramenz, G. W. Relationship of principal leader behavior and organizational structure of the IGE/MUS-E to I&R unit effectiveness. Unpublished doctoral dissertation, University of Wisconsin-Madison, 1974.
- Grinker, R. R. Toward a unified theory of human behavior. New York: Basic Books, 1956.
- Haberstroh, C. J. Organization design and systems analysis. Handbook of Organizations, March, 1965, 1171-1211.
- Hall, A. D., and Fagen, R. E. Definition of systems. In General systems, yearbook of the society for general systems research, 1956.
- Hays, W. L. Statistics. New York: Holt, Rinehart, and Winston, 1963.
- Holt, J. How kids learn. New York: Pitman Publishing Corporation, 1967.
- Horney, K. Neurosis and human growth. New York: Norton, 1950.
- Hughes, T. A study of the relationship of coping strength to self-concept, school achievement, and general anxiety level of sixth grade pupils (Doctoral dissertation, University of Tennessee, 1967). Ann Arbor, Michigan: University Microfilms No. 68-3747.
- Immegart, G. L. The systems movement and educational administration. In G. C. Mansergh (Ed.), Systems approaches to the management of public education. Detroit, Michigan: Metropolitan Detroit Bureau of School Studies, 1969.

- Ironside, R. A. The 1971-72 nationwide installation of the multiunit/IGE model for elementary schools: a process evaluation. Durham, North Carolina: Educational Testing Service, 1972.
- James, W. Principles of psychology. New York: Holt, 1890.
- Johnson, D. W. Affective outcomes. In H. J. Wolberg (Ed.), Evaluating educational performance. Berkeley, California: McCutchan Publishing Corporation, 1974.
- Johnson, R. A., Kast, F. E., and Rosenzweig, J. E. The theory and management of systems (2nd ed.). New York: McGraw Hill, 1967.
- Katzenmeyer, W. G., and Stenner, A. J. Development and validation of the self observation scales: a self concept measure for elementary school children. Advance publication, No. 8. Durham, North Carolina: National Testing Service. Presented at American Personnel and Guidance Association, New York, 1975.
- Katzenmeyer, W. G., and Stenner, A. J. Estimation of the invariance of factor structures across sex and race with implications for hypothesis testing. Advance publication, No. 6. Durham, North Carolina: National Testing Service. To be published in Journal of Educational and Psychological Measurement (in press, 1976).
- Katzenmeyer, W. G., and Stenner, A. J. Self observation scales - Intermediate level. Durham, North Carolina: National Testing Service, 1973.
- Katzenmeyer, W. G., and Stenner, A. J. Teacher rated classroom behavior and self concept of upper elementary grade children. Advance publication, No. 15. Durham, North Carolina: National Testing Service. (Mimeographed, 1975).
- Kerlinger, F. N. Foundations of behavioral research (2nd ed.). Chicago: Holt, Rinehart, and Winston, 1973.
- Kinch, J. A. A formalized theory of self-concept. American Journal of Sociology, 1963, 68, 481-486.
- Klausmeier, H. J., Quilling, M. R., and Sorenson, J. S. The development and evaluation of the multiunit elementary schools, 1966-70. Technical Report No. 158. Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1971.
- Klausmeier, H. J., Rossmiller, R. A., and Saily, M. Individually guided elementary education: concepts and practices. New York: Academic Press, 1977.

- Klausmeier, J. J. The multiunit elementary school and individually guided education. Phi Delta Kappan, 1971, XIII, 12-14.
- Knezevich, S. J. Administration of public education (2nd ed.). New York: Harper and Row, 1969.
- LaBenne, W. D., and Greene, B. Educational implications of self-concept theory. Pacific Palisades, California: Goodyear Publishing, Inc., 1969.
- Lecky, P. Self-consistency, a theory of personality. New York: Island Press, 1945.
- Leonard, G. B. Education and ecstasy. New York: Dell Publishing, 1968.
- Lewin, K. Principles of topological psychology. New York: McGraw Hill, 1936.
- Lipham, J. M., and Klausmeier, H. J. Development and description of IGE. In J. M. Lipham and M. J. Fruth (Eds.), The principalship and individually guided education. Reading, Massachusetts: Addison-Wesley, 1976.
- Lipham, J. M., and Hoeh, J., Jr. The principalship: foundations and functions. New York: Harper and Row, 1974.
- Lumpkin, D. D. The relationship of self concept to achievement in reading. Unpublished doctoral dissertation, University of California, 1959.
- Lundholm, H. Reflections upon the nature of the psychological self. Psychological Review, 1940, 47, 110-126.
- Mead, G. H. Mind, self and society. Chicago: University of Chicago Press, 1934.
- Mendenhall, D. R. Relationship of organizational structure and leadership behavior to teacher satisfaction in IGE schools. Unpublished doctoral dissertation, University of Wisconsin-Madison, 1976.
- Murphy, G. Personality. New York: Harper and Brothers, 1947.
- Nelson, R. G., Junker, L. K., and Fischbach, T. J. Learning climate in IGE/MUS-E schools (revised edition). Report from Program 3: Facilitative Environments. Technical Report No. 213. Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1975.
- Owens, J. A history of ancient western philosophy. New York: Appleton-Century-Crofts, 1959.

- Parsons, T. The social system. New York: Free Press, 1951.
- Pellegrin, R. J. Some organizational characteristics of multiunit schools. Working Paper No. 22. Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1969.
- Peterson, T., and Scott, C. Instructional program and academic self-concept. ED Lines from the Office of Education, January, 1975, 11-12.
- Porter, R. B., Cattell, R. B., and Schaie, C. W. The children's personality questionnaire. Champaign, Illinois: Institute for Personality and Ability Testing, 1959, 1974.
- Rogers, C. R. Client-centered therapy. Boston: Houghton Mifflin, 1951.
- Rossmiller, R. A., and Geske, T. G. First year field tryout: a cost-effectiveness study of the IGE/MUS-E organization. Working Paper, in press, 1976.
- Sheerer, E. J. An analysis of the relationship between acceptance of and respect for self and acceptance of and respect for others in ten counseling cases. Journal of Consulting Psychology, 1949, 13, 169-75.
- Sigurdson, C. W. Effectiveness of the instruction and research unit and student achievement in IGE schools. Unpublished doctoral dissertation, University of Wisconsin-Madison, 1976.
- Simon, S. B., Howe, L. W., and Kirschenbaum, H. Values clarification: a handbook of practical strategies for teachers and students. New York: Hart Publishing Company, 1972.
- Snygg, O., and Combs, A. W. Individual behavior. New York: Harper, 1949.
- Spuck, D. W., Stofflet, F. P., and Fleckenstein, D. J. Program WISE* STAT.DISTX. Madison, Wisconsin: The University of Wisconsin, Wisconsin Information Systems for Education, 1971. (Micrographed).
- Stenner, A. J., and Katzenmeyer, W. G. Notes on the development of the self observation scales. Paper prepared for the American Educational Research Association Meeting, Chicago, April, 1974.
- Stenner, A. J., and Katzenmeyer, W. G. Self concept, ability and achievement in a sample of sixth grade students. Journal of Educational Research, 1976, 69 (7), 270-273.

- Stenner, A. J., and Katzenmeyer, W. G. Self concept and reading achievement of upper elementary grade children. In press, 1976.
- Stenner, A. J., and Katzenmeyer, W. G. Self concepts of children from different social class and ethnic groups. Advance publication, No. 11. Durham, North Carolina: National Testing Service, in press, 1976.
- Stenner, A. J., and Katzenmeyer, W. G. Self concepts of upper elementary grade children: sex, race and socioeconomic concomitants. Advance publication, No. 10. Durham, North Carolina: National Testing Service. in press, 1976.
- Stenner, A. J., and Katzenmeyer, W. G. Self concepts of young disadvantaged black children. Journal of Negro Education, in press, 1976.
- Stofflet, F. P., and Spuck, D. W. Program WISE*LIB SETSTP. Madison, Wisconsin: The University of Wisconsin, Wisconsin Information Systems for Education, 1971. (Mimeographed).
- Taylor, F. W. Scientific management. New York: Harper and Row, 1911.
- Williams, R. L., and Cole, S. Self concept and school adjustment. Personnel and Guidance Journal, 1968, XXXXVI, 478-81.
- Wylie, R. The self concept. Lincoln, Nebraska: University of Nebraska Press, 1961.
- Wylie, R. The self concept, revised edition, Vol. 1. Lincoln, Nebraska: University of Nebraska Press, 1974.
- Yomtoob, Y. A study of the effect of an individualized instructional program on attitude, self-concepts and arithmetic achievement. Unpublished doctoral dissertation, University of Toledo, 1974.
- 1973-74 ICE/Multiunit elementary school directory. Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1974.

APPENDICES

APPENDIX A

87/A

			TELEPHONE SURVEY	
CODE: C = Cities, 200,000 + O = Others (Under 200,000) 1st # = Random Order 2nd # = Directory Number			Name of School: _____ Location: _____ Phone: _____ Person Contacted: _____ Researcher: _____ Date: _____	
CHECK APPROPRIATE BOX(ES): ☐ Yes, _____ ☐ Maybe, _____ ☐ No, _____ ☐ Call back, _____			Follow up letter sent on: _____ _____ _____ Confirmation call back: _____ _____ Inconvenient time for visitation: _____ _____	Comments:

Telephone Interview to Identify 40 Schools
as Subjects for the "K-3 Correlational Studies"
and the "Evaluation of IGE vs. Non-IGE Study"

Comments

1a. Do you still consider your school an IGE school?

a) Yes

b) We're working on it

c) No. Would you mind telling us why not? _____

1b. How many students are in your school? _____

We'd like to ask about your school's organization:

2. What grade level equivalents are included in your school? _____

3a. Is your school organized into units, teams, or learning communities?

a) Yes (this response includes "partially," "some," or "all" answers)

b) No (no units at all)

3b. How many units (learning communities) are in your school? _____

- 3c. Describe the unit (learning community) structure (excluding student teachers, interns, and aides).
For each unit (learning community) give:

	1	2	3	4	5	6	7	8
Unit Name								
Number of teachers assigned to the unit full time (including unit leader)								
Number of pupils (as exact as you can give it)								
Grade level equivalents								
Does the unit staff meet at least once weekly?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

COMMENTS:

3d. Does this description account for all pupils in the school?

a) Yes

b) No. If no, explain who 'an't included in these units:

-
- 1) kindergarten
 - 2) special education pupils
 - 3) other "regular" pupils (i.e., not special education)

4a. Do you have unit leaders (or learning community leaders) assigned for a year or more to each unit (learning community)?

a) Yes, for each unit (learning community)

b) Yes, for some units (learning communities); not for others

c) No, none at all

4b. Does your school have an Instructional Improvement Committee (IIC) or a Program Improvement Council (PIC)?

a) Yes

b) No

c) Don't know; if c is chosen, ask:

Do you meet regularly with the unit leaders (learning community leaders)?

1) Yes

2) No

4c. If yes, how many people are the regular members of this group? _____

4d. Does this include the principal and all unit leaders (learning community leaders)?

a) Yes

b) No

4e. How often does the IIC (or PIC) meet? _____

a) once a semester

b) once a month

c) twice a month (every two weeks)

d) once a week

5. Do you participate in activities with other IGE schools at least once a year? These could be schools within your district (such as in a Systemwide Program Committee [SPC]) or schools outside your district (such as a League, Network, PACT, or HUB).

a) Yes

b) No

Now I'd like information about your school's instructional program in reading, and math. First, we'll talk about reading. Generally, we're looking for a sequence in which your teachers identify reading objectives for the students in their unit, preassess for those objectives, then group students according to which objectives they need to master, instruct on those objectives, then test again, and regroup.

6a. Have you done this entire process for reading in your whole school?

a) Yes

b) No, explain which students are excluded _____

Comments

6b. Have you done it for two years or more (at least since October, 1973)?

a) Yes

b) No

(Refer to Organizational chart, and say "As you know we are interested in collecting data in one intermediate unit. I'd like more specific information about units _____, _____, and _____." (the intermediate units))

7a. Are any of the unit leaders in these intermediate units new to their units as of this September ('75)?

a) Yes, in unit(s) _____, _____, _____, (discount those units)

b) No

7b. In any of these (remaining) units are more than half of the teachers new to the unit this September?

a) Yes, in unit(s) _____, _____, _____.

b) No

In any of these (remaining intermediate) units, we are looking for that same instruction sequence in relation to mathematics. That is, math objectives are set for the students in the unit, there is preassessment, grouping for instruction, postassessment, and regrouping.

Comments

7c. Have these units done this entire process in math for at least one year? (i.e., since September, '74)

a) Yes, in all units

b) No, only in units _____, and _____

c) No, not in any units

7d. Have the majority of students in this (these) unit(s) had this instructional sequence in math last year? (either in the unit they are presently in or in another unit?) Explain.

a) Yes, for unit(s) _____

b) No

If more than one intermediate unit is left, randomly choose intermediate unit for study, and solicit participation of the randomly selected unit. If they seem at all interested, ask:

8. Are there non-IGE schools in your district?

a) Yes, is so approximately how many? _____

b) No

c) I don't know

APPENDIX B

Form Approved
OMB No: 51-S75077
Approval Expires June 1976

I AND R UNIT OPERATIONS QUESTIONNAIRE

You are participating in a national study conducted by the Wisconsin Research and Development Center for Cognitive Learning. The purpose of this instrument is to determine the effectiveness of the Instruction and Research Unit in ICE Multiunit Elementary Schools.

This instrument to be completed by the unit (team or learning community) leader and staff teachers consists of 50 operations items. Completion of the entire instrument should require about 30 minutes of your time. It is important that all items receive a response as any item left blank will give a distorted picture of your school. All responses will remain confidential and none will be identified by person, school, or school district.

Please answer the question about each item by placing your response in the space provided. Upon completing the instrument, please place it in the envelope provided and return it to the researcher visiting your school.

Your participation in this study is sincerely appreciated.

Published by The Wisconsin Research and Development Center for Cognitive Learning, supported in part as a research and development center by funds from the National Institute of Education, Department of Health, Education and Welfare. The opinions expressed herein do not necessarily reflect the position of the National Institute of Education and no official endorsement by the National Institute of Education should be inferred.

I AND R UNIT OPERATIONS QUESTIONNAIRE

Directions: The following items are based upon the performance objectives identified by the Wisconsin R and D Center as being the responsibility of the I and R unit. Please indicate how effectively your unit achieves these objectives by circling the response which most accurately describes, in your opinion, the operations of your unit.

VE = Very effectively
 E = Effectively
 SE = Somewhat effectively
 I = Ineffectively
 VI = Very ineffectively

<u>Reading</u>	A. Instructional Program (Please answer separately for Reading and Mathematics in questions 1-18)	<u>Mathematics</u>
	Our I and R unit, in the curricular area to which we are applying the Instructional Programming Model:	
VE E SE I VI	1. Develops and/or selects outlines of skills and concepts to be learned which are appropriate to the student in the unit.	VE E SE I VI
VE E SE I VI	2. Develops and/or selects behavioral objectives related to the skill and concept outlines.	VE E SE I VI
VE E SE I VI	3. Specifies materials, equipment, personnel, space and time needed for instruction.	VE E SE I VI
VE E SE I VI	4. Uses a variety of materials for each of the identified instructional objectives.	VE E SE I VI
VE E SE I VI	5. Specifies teacher activities needed for instruction.	VE E SE I VI
VE E SE I VI	6. Preassesses students for attainment of the objectives within the first month of implementing the Instructional Programming Model.	VE E SE I VI

GO ON TO THE NEXT PAGE . . .

VE = Very effectively
 E = Effectively
 SE = Somewhat effectively
 I = Ineffectively
 VI = Very ineffectively

ReadingMathematics

- | | | | |
|--------------|-----|--|--------------|
| VE E SE I VI | 7. | Preassesses students' motivational level, learning style, interest and attitudes, and special problems as soon after the preassessment of objectives attainment as the unit staff can conduct the assessment and utilize the results. | VE E SE I VI |
| VE E SE I VI | 8. | Places students in initial groups in IGE curriculum areas based on preassessment results regarding achievement, learning style, motivational level, interest, or other relevant variable(s). | VE E SE I VI |
| VE E SE I VI | 9. | Uses a variety of student grouping patterns in the course of a particular curriculum such as a) independent study, b) one-to-one (teacher-student), c) one-to-one (student-to-student) d) small group (3-11 students), e) medium group (12-19 students), f) class-sized groups (20-39 students), and g) large group (more than 30 students). | VE E SE I VI |
| VE E SE I VI | 10. | Assesses students for attainment of objectives after instruction. | VE E SE I VI |
| VE E SE I VI | 11. | Records assessment results in a usable form (e.g., on charts, McBee cards, lists, or individual folders). | VE E SE I VI |
| VE E SE I VI | 12. | Conducts evaluation regarding the percentage of students who attain specific objectives. | VE E SE I VI |
| VE E SE I VI | 13. | Regroups students at least every two to three weeks based on needs and attainment of objectives. | VE E SE I VI |
| VE E SE I VI | 14. | Plans for all I and R unit teachers to teach in the IGE subject-matter areas. | VE E SE I VI |
| VE E SE I VI | 15. | Conducts evaluation regarding the effectiveness of the instructional materials currently in use. | VE E SE I VI |

GO ON TO THE NEXT PAGE . . .

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 SE = Somewhat effectively
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 VI = Very ineffectively

Reading

VE E SE I VI

16. Conducts evaluation regarding the effectiveness of the instructional techniques currently in use.

VE E SE I VI

17. Conducts evaluation regarding the effectiveness of the assessment materials currently in use.

VE E SE I VI

18. Conducts evaluation regarding the effectiveness of the assessment techniques currently in use.

Mathematics

VE E SE I VI

VE E SE I VI

VE E SE I VI

B. Staff Development

Our I and R unit:

VE E SE I VI

19. Participates in the school's staff development program.

VE E SE I VI

20. Participates in the evaluation of the school's staff development plan.

VE E SE I VI

21. Participates in the evaluation of the intern-student teacher program.

22. Meets together for at least three days prior to the opening of school:

VE E SE I VI

- a. to make immediate plans regarding student grouping patterns and scheduling for the first one to two weeks of school.

VE E SE I VI

- b. to make long-range plans regarding our I and R unit's instructional design and goals for the entire year.

VE E SE I VI

23. Meets at least one day per semester when children are not at school to extend ICE planning into other curricular areas.

GO ON TO THE NEXT PAGE . . .

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 E = Effectively
 SE = Somewhat effectively
 I = Ineffectively
 VI = Very ineffectively

C. Organizational Operations

Our I and R unit:

- | | |
|--------------|--|
| VE E SE I VI | 24. Schedules unit meetings regularly. |
| VE E SE I VI | 25. Schedules at least two hours per week with one hour in a single block to plan for instruction. |
| VE E SE I VI | 26. Holds unit meetings during the regular staff working day. |
| VE E SE I VI | 27. Requires the unit leader, unit teachers, interns, and student teachers assigned to the unit to attend unit meetings. |
| VE E SE I VI | 28. Prepares and distributes an agenda to all personnel involved in the meeting prior to unit meeting time. |
| VE E SE I VI | 29. Has its unit meetings chaired by the unit leader. |
| VE E SE I VI | 30. Focuses discussion on agenda topics at unit meetings. |
| VE E SE I VI | 31. Has consultants, teachers, IMC director (librarian), aides, and others attend unit meetings at our request. |
| VE E SE I VI | 32. Keeps minutes of unit meetings. |
| VE E SE I VI | 33. Distributes minutes of unit meetings to total unit staff, the IIC, and others who attend unit meetings. |
| VE E SE I VI | 34. Holds goal-setting meetings at least once per semester. |
| VE E SE I VI | 35. Holds curriculum design meetings at least once per semester. |
| VE E SE I VI | 36. Holds meetings to evaluate instructional units, programs, and unit operations at least once per quarter. |
| VE E SE I VI | 37. Holds groupings and scheduling meetings at least once every two weeks. |
| VE E SE I VI | 38. Holds meetings whenever necessary to deal with immediate problems. |

GO ON TO THE NEXT PAGE . . .

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 E = Effectively
 SE = Somewhat effectively
 I = Ineffectively
 VI = Very ineffectively

- | | |
|--------------|--|
| VE E SE I VI | 39. Evaluates the flexibility of the schedule at least once per quarter. |
| VE E SE I VI | 40. Assesses each unit member's expertise in subject matter at least once per year. |
| VE E SE I VI | 41. Assesses each unit member's expertise in instructing various sizes and kinds of groups at least once per year. |
| VE E SE I VI | 42. Provides at least five hours per week released time from instruction for the unit leader to plan, manage, study and conduct research. |
| VE E SE I VI | 43. Provides at least one hour per week released time from instruction for teachers to plan, study and conduct research. |
| VE E SE I VI | 44. Assigns aides (instructional and clerical) tasks according to broad guidelines established by the IIC and/or specific guidelines established by the unit. |
| VE E SE I VI | 45. Assigns each teacher a specialization in a curriculum area, or teaching styles to develop, so that he/she can act as a resource person to the unit. |
| VE E SE I VI | 46. Identifies each student in the unit with a teacher who monitors his/her progress during the year and takes initiative as required in the ICE subject-matter areas. |

D. School-Community Relations

Our I and R unit:

- | | |
|--------------|--|
| VE E SE I VI | 47. Identifies each student with a staff-member for purposes of home-school relations, including conferences and home visits, as well as day-to-day guidance of the student and monitoring of his performance. |
| VE E SE I VI | 48. Reports individual students' progress to parents. |

GO ON TO THE NEXT PAGE . . .

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- VE E SE I VI 49. Cooperates with the IIC in interpreting the ICE/MUS-E concept to parents and residents in the school attendance area.
- VE E SE I VI 50. Cooperates with the IIC in utilizing volunteer community personnel (e.g., parents, other adults, high school and college students, and people with special expertise) in the instructional program and other school activities.

Thank you for your cooperation.

APPENDIX C



the
Wisconsin
Research and Development Center
for Cognitive
Learning

the University of Wisconsin · 1025 West Johnson Street · Madison, Wisconsin 53706 · (608)262-4001

1975-76

R-3 Research Project

General Information

1. This is a national study involving 40 IGE schools. One intermediate unit/team from each school will be participating. Each school and each unit have been chosen randomly.
2. One or two researchers from the R and D Center will be visiting the intermediate unit/team during one school day to collect data during the month of January or February.
3. The principal and the selected team members will receive indepth questionnaires in advance of the school visits. A packet with instruments and instructions for the principal, team leader, and teachers will be sent to the school prior to the visitation. The instruments need not be filled out in one sitting. You will have a period of at least 2 weeks to complete them. Contained in this packet will be the following instruments:
 - a. Principal Instruments (Total Time [1 & 2] 25-30 minutes)
 - 1) Background Information and Organizational Structure Survey (Form P)
The purpose of this instrument is to obtain background data and to determine the nature of the organizational structure in IGE schools. It requires approximately 30 minutes to complete.
 - 2) Time Allocation of Instructional Personnel
The purpose of this instrument is to obtain information about the utilization of time by staff members in I & R units. It requires approximately 15 minutes to complete.
 - 3) School Expenditure Data Form
The purpose of this instrument is to provide information about the major direct and indirect costs involved in the operation of an IGE school.

b. Unit Leader Instruments (Total Time 1 1/2-2 hours)

- 1) Background Information and Organizational Structure Survey (Form UL)
The purpose of this instrument is to obtain background data and to determine the nature of the organizational structure in IGE schools. It requires approximately 20 minutes to complete.
- 2) Decision Involvement Analysis
The purpose of this instrument is to determine the nature of involvement in the decision-making process in IGE schools. It requires approximately 15 minutes to complete.
- 3) Principal Leadership Assessment
The purpose of this instrument is to determine the nature of the principal's leadership style. It requires approximately 10 minutes to complete.
- 4) Job Satisfaction Survey
The purpose of this instrument is to determine the extent of satisfaction with various aspects of the job in IGE schools. It requires approximately 30 minutes to complete.
- 5) Time Allocation of Instructional Personnel
The purpose of this instrument is to obtain information about the utilization of time by staff members in I & R units. It requires approximately 15 minutes to complete.
- *6) Unit/Team Operations Questionnaire (Effectiveness Measure)
The purpose of this instrument is to investigate the degree (as perceived by the teachers) to which the team/unit accomplishes particular tasks which have been identified as belonging to the teaching team/unit. It requires approximately 30 minutes to complete.

c. Unit Teacher Instruments (Total Time 2-2 1/2 hours)

- 1) Background Information and Organizational Structure Survey (Form T)
The purpose of this instrument is to obtain background data and to determine the nature of the organizational structure in IGE schools. It requires approximately 20 minutes to complete.
- 2) Decision Involvement Analysis
The purpose of this instrument is to determine the nature of involvement in the decision-making process in IGE schools. It requires approximately 15 minutes to complete.

R-3 Research Project
General Information

Page 3

- 3) Unit Leader Leadership Assessment
 The purpose of this instrument is to determine the nature of the unit leader's leadership style. It requires approximately 10 minutes to complete.
 - 4) Principal Leadership Assessment
 The purpose of this instrument is to determine the nature of the principal's leadership style. It requires approximately 10 minutes to complete.
 - 5) Job Satisfaction Survey
 The purpose of this instrument is to determine the extent of satisfaction with various aspects of the job in ICE schools. It requires approximately 30 minutes to complete.
 - 6) Time Allocation of Instructional Personnel
 The purpose of this instrument is to obtain information about the utilization of time by staff members in I & R units. It requires approximately 15 minutes to complete.
 - *7) Unit/Team Operations Questionnaire (Effectiveness Measure)
 The purpose of this instrument is to investigate the degree (as perceived by the teachers) to which the team/unit accomplishes particular tasks which have been identified as belonging to the teaching team/unit. It requires 30 minutes to complete.
4. During the visit, the researcher(s), in cooperation with the unit teachers will administer a standardized self concept survey to one third of the students in the unit, a mathematics standardized test to the second third of the unit, and a standardized reading test to the final third of the students in the unit. Thus, no student will take more than one test. These standardized instruments are:
- *a. Intermediate Self Observation Scales (SOS) California Form (C)
 This instrument takes approximately 25 minutes.
 - b. California Test of Basic Skill: (Reading and Mathematics)-Form S
 This instrument takes approximately 1 1/2 hours.
5. The purpose of this research is twofold:
- a. We will relate the "effectiveness" of the unit to student affective behavior and student achievement. The question that arises is: "Is there a positive correlation between team or unit effectiveness and student self concept* and achievement?" We feel that in addition to being of significant value to researchers at the R & D Center, the answer to this question would be of great interest to you as you promote, develop and refine your ICE school.

*Emphasis supplied for this study only

R-3 Research Project
General Information

Page 4

- b. We will be examining the factors (organizational structure and leadership) that contribute most strongly to teacher satisfaction.
- 6. a. We will send self concept and achievement profiles to each participating unit/team as soon as the publisher sends them to us--at no cost to the school.
- b. When the entire study of 40 ICE schools is complete, we will send technical reports of the research as soon as the R & D Center makes them available--again at no cost to the school.
- c. No schools or students will be identified in any reports.
- 7. Specific details on procedures will be sent to participating schools prior to visitation.
- 8. Additional R & D research, presently in the planning stage, will collect comparative school data on non-ICE schools.

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APPENDIX D

Name of School _____

Researcher(s) _____

PROCEDURAL DETAILSBEFORE ARRIVING AT YOUR SCHOOL:

- (1) a. In order that we may group and randomize children for testing purposes, please send me at your earliest convenience a list of the names of the children in unit/team _____, including year and month of birth, sex, and grade level equivalent.

SAMPLE: (1) Jane Aaron 65/3 - F - 5th
 (2) Larry Brown 64/3 - M - 6th

Send student list to: R-3 Research Project, Room 571
 1025 West Johnson Street
 Madison, Wisconsin 53706

- b. Please exclude from your list all children who participate in special education programs. They will not be included in this particular study.
- c. After we receive your list, we will randomly place the children into 3 testing groups and will then send you the lists of children to facilitate testing arrangements in your school. This list will accompany teacher and principal questionnaire packet.
- d. After receiving your list of children (1a.) and after these children have been randomly placed into 3 groups, we will fill in all the information needed on the student answer sheet prior to testing, so that teachers or students need not waste time on this procedure.
- (2) The principal and the selected team teachers will receive their instruments prior to our visitation. Complete instructions will be included with the instruments. We will also send simplified directions for administering the math and reading achievement tests, in order that the teachers may review the directions prior to testing.
 *A researcher will be administering the self-concept test.

WHILE AT YOUR SCHOOL:

- (1) Meeting with Teachers

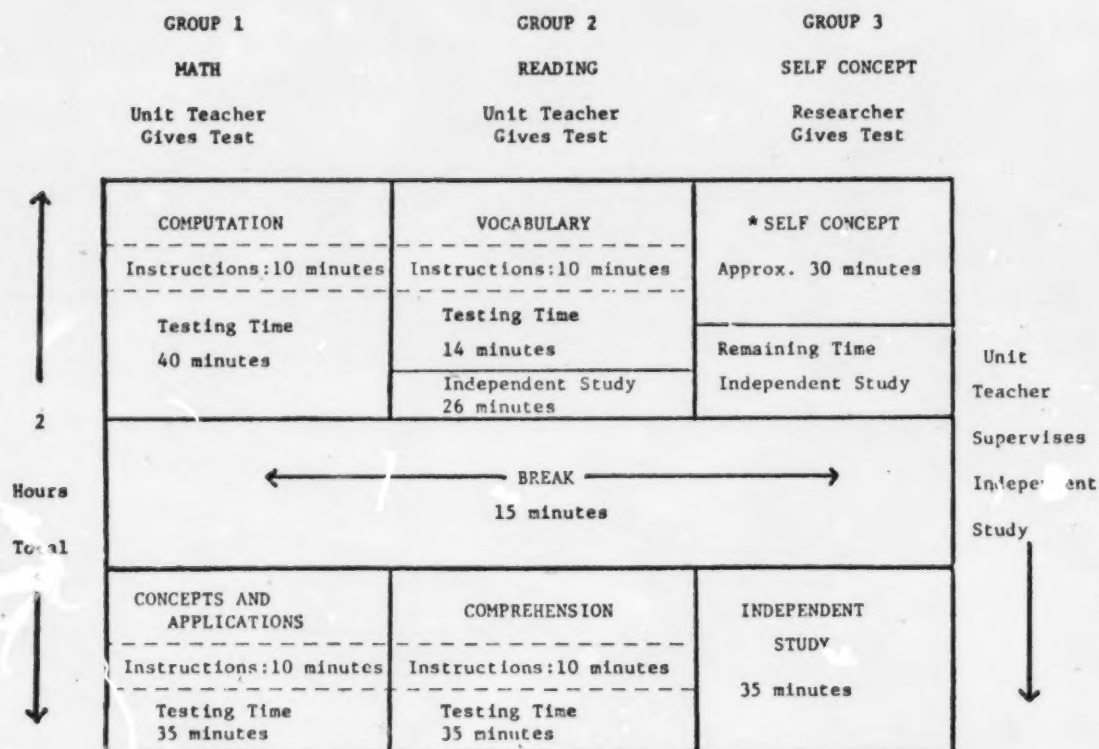
We would like to arrive at your school in the morning of the day of testing, to meet with the selected team to discuss final arrangements for the testing procedure, and to help in any way possible. This would necessitate a specified meeting time of at least one half hour. We would like to begin testing in the morning whenever possible and finish by 11:00. We would appreciate meeting with the principal from 11:00 until noon.

*Emphasis supplied for this study only

-2-

(2) Testing Procedure for Children

We are requesting that children in the selected unit be divided by team members according to the grouping list as indicated in (1d.) above. The testing times of each test are shown in a diagram below. As indicated, each test requires different amounts of time. This will necessitate the need for quiet independent study (i.e., library book, seat work, etc.) for some students when they are not engaged in testing. We would appreciate team teachers preparing these students for this independent study, especially in Group 3, for these children will have a considerable amount of free time.



This grouping arrangement requires that one unit teacher be assigned to Group 1 and one unit teacher to Group 2 to administer the appropriate test to that group. The researcher will be responsible for giving the Self Concept Test, and will serve as overall facilitator of the testing procedure.

-3-

An example of a specific time schedule might look like the following:

8:00 - 8:30:	Meeting with Faculty
9:00 - 9:50:	(1) <u>Math Group</u> takes Computation test.
	(2) <u>Reading Group</u> takes Vocabulary test and does independent study.
	(3) * <u>Self Concept Group</u> takes entire test and does independent study.
9:50 -10:10:	BREAK (OUTDOORS) FOR ALL CHILDREN
10:15 -11:00:	(1) <u>Math Group</u> takes Concepts and Applications test.
	(2) <u>Reading Group</u> takes Comprehension test.
	(3) * <u>Self Concept Group</u> engages in independent study.
11:00 - Noon:	Meet with Principal

This time schedule may vary for your school, and we do want to accommodate whatever arrangement that best suits your needs.

APPENDIX E

Future Research Issues on Student Affective Behavior in IGE Schools

If a researcher were designing an "ideal" study in which its purpose was to clarify further the relationship between student affective behavior and the IGE change process, certain research issues should be considered.

First, in terms of an overall research design, a longitudinal approach seems most necessary. Baseline data should be obtained from a school relative to the degree of implementation of IGE concepts and student affective behavior. This approach enables a researcher to chart at regular intervals change in student affective behavior as it relates to the IGE process. In charting these changes, gross measures of analysis are usually obtained which lead to the next issue of concern.

In many research studies, individual response data are obtained first, but then aggregated and converted into mean scores. Analyses are then conducted utilizing mean scores. This process results in a significant loss of variance. The responses of those who scored on the extreme ends of the continuum are virtually washed out, and what usually results is some misleading mean score. Individual change is lost in such a statistical process. What is desperately needed is a method to measure change in individuals, or second best, change in target groups (slow-learners, accelerated-learners, etc.). How this may occur leads to a third important issue for consideration.

It is no secret that affective behavior of children is influenced by maturation, sex, home factors, etc. To ascertain more accurately

the relationship of the IGE process and student affective behavior, extensive data must be collected concerning these extraneous influencing variables. To explore, for example, the relationship of IGE and student affective behavior in seven year olds is quite different than the same comparison with twelve year olds. The issue that is being emphasized here, is the need to obtain indepth background data on the population in question, and to control statistically or take into consideration (e.g., stratification of population) such influences.

Collection of data is perhaps the most important issue to consider in designing an ideal study. If one does not assess the state of the art accurately, everything thereafter becomes highly irrelevant. Self report, although cost-effective and timely, is a questionable method in the obtainment of valid data. Self report relies solely on individual perceptions and its validity rests highly with the ability of an individual to relate honestly to his/her environment and feelings. A data collection approach that seems to warrant attention is that of observation and interview. Specifically, an outside team of observers applying pre-determined criteria would assess a given situation, and together arrive at conclusions concerning the question under consideration. This technique implies that such a team of observers would be well-trained and that they would employ various methods to arrive at such judgements. This approach takes assessment out of the individual perception level and places more merit on a jury approach to decision making.

Lastly, an issue that is often forgotten in evaluating the influence of a particular schooling process on a student outcome is whether

or not the school objective/goal being assessed is indeed a priority of the school. If a healthy self concept for children is a priority of the school, then specific performance objectives and activities that promote this growth should be established. The definition of such provides a framework in which a meaningful assessment process can be conducted.

The five research issues presented here, although not intended to be inclusive, are necessary considerations a researcher must address when designing a study which examines student affective behavior in ICE schools. Attention to these important areas increases the possibility of valid conclusions and provides research designs that clarify the relationship of the ICE change process to student affective behavior in schools.

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